

FIG. 1A

001000 59222560

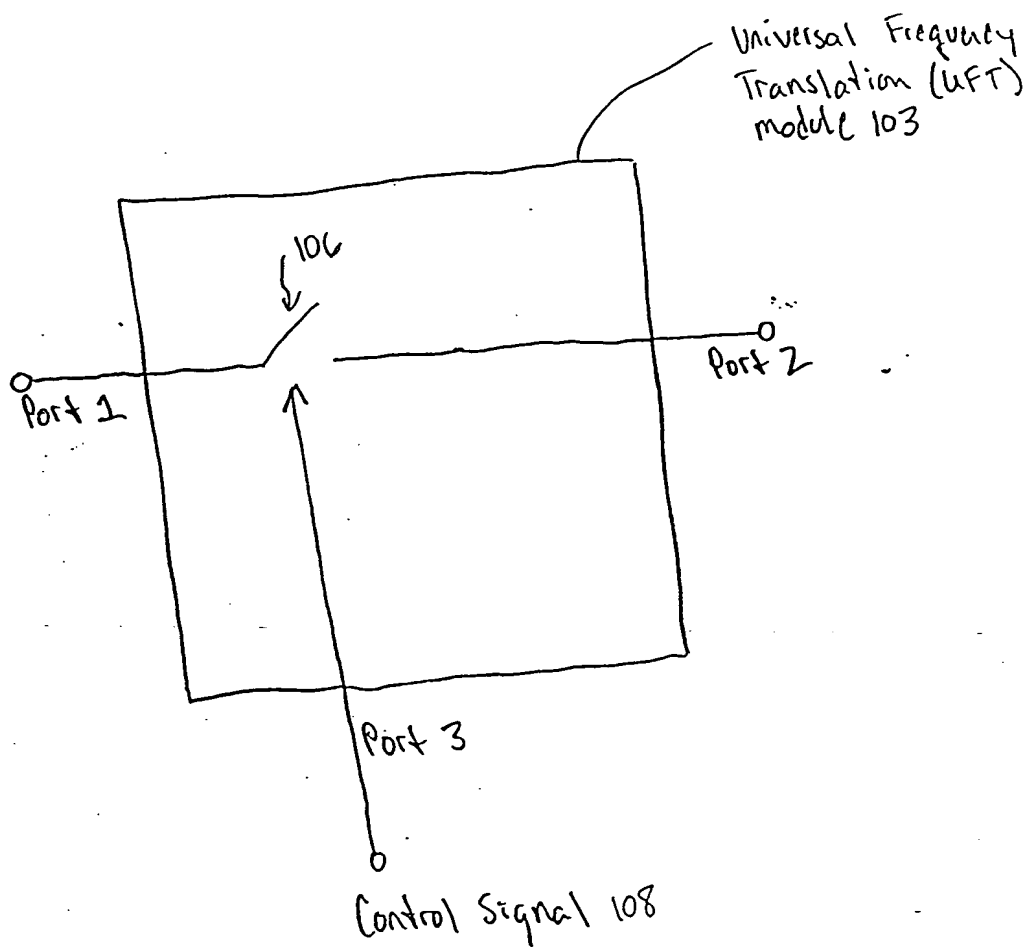


FIG. 1B

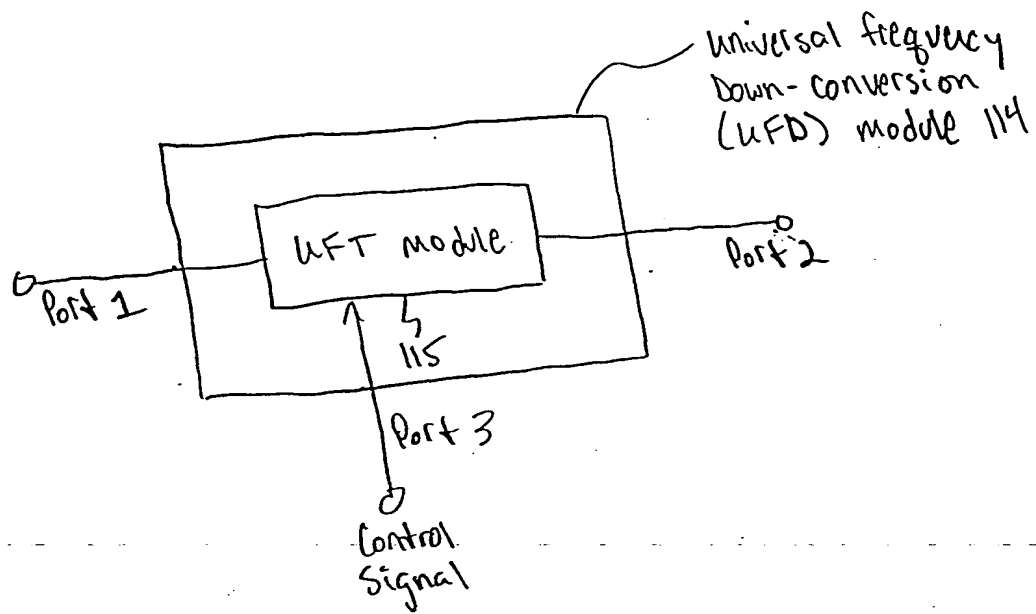


FIG. 1C

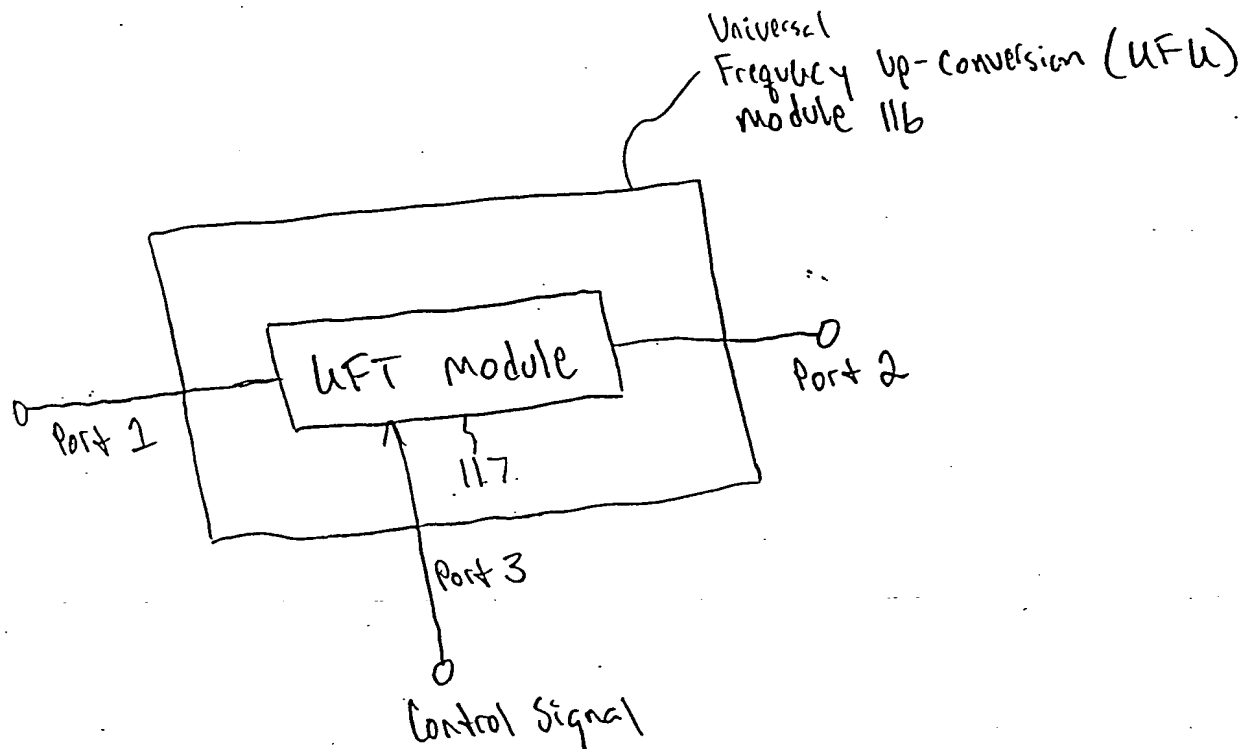
[illegible]

FIG. 1D

000000 556666 999

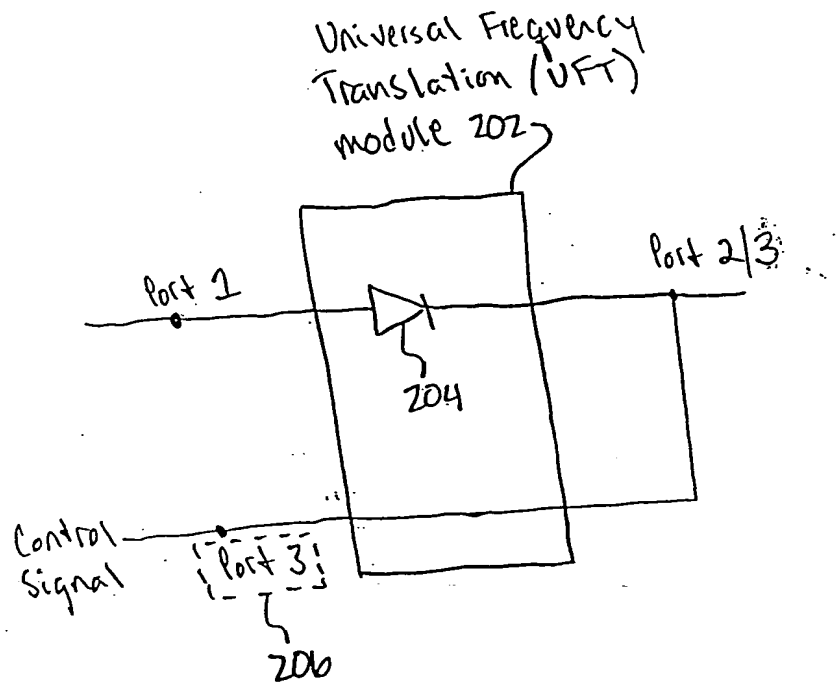


FIG. 2A

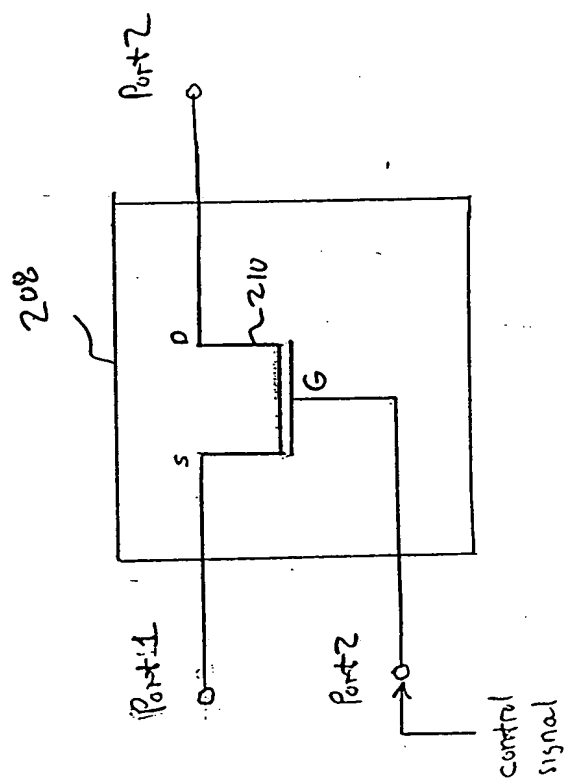
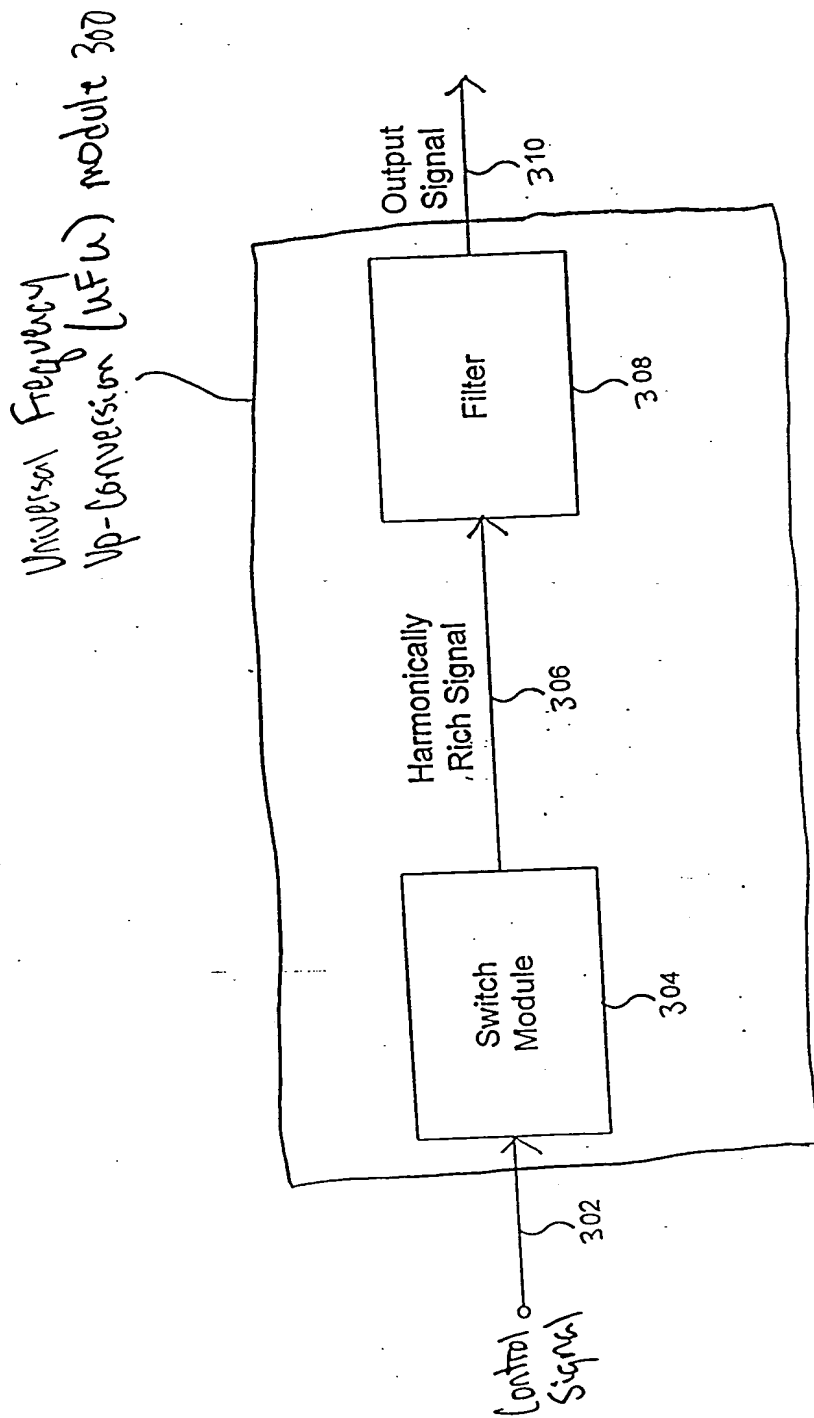


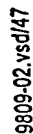
FIG. 2B

M



M

FIG. 4





Universal Frequency  
up-conversion  
(UFU) module 590

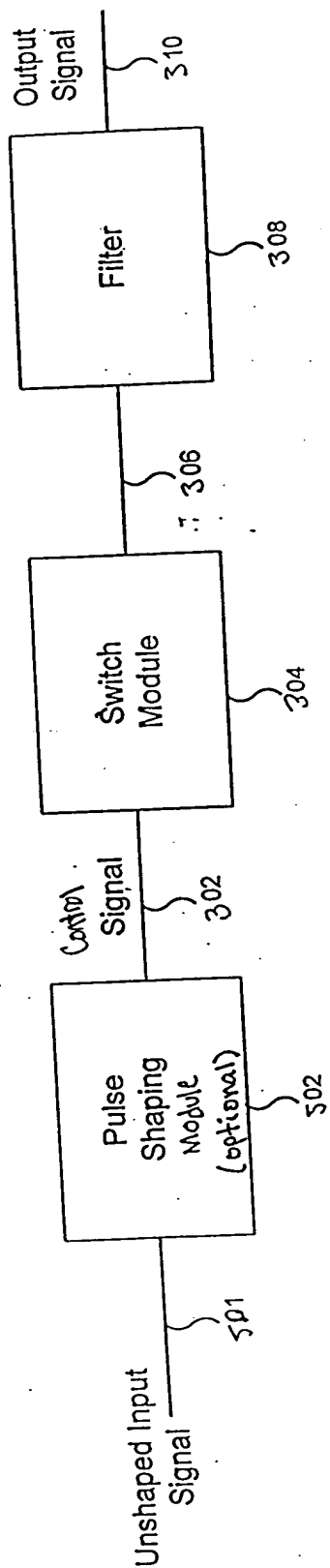
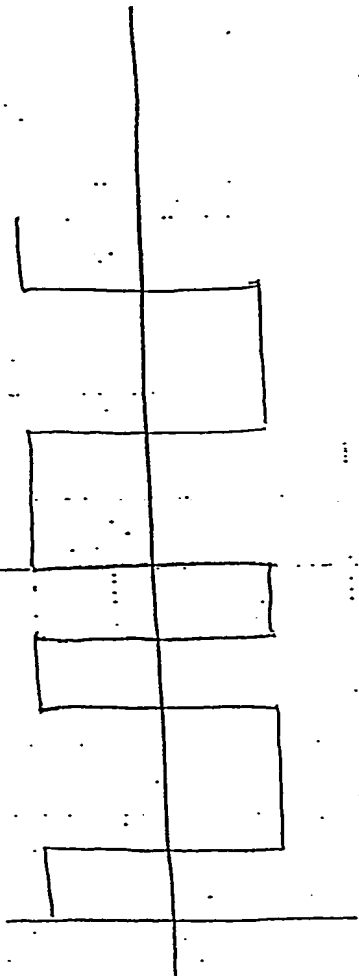


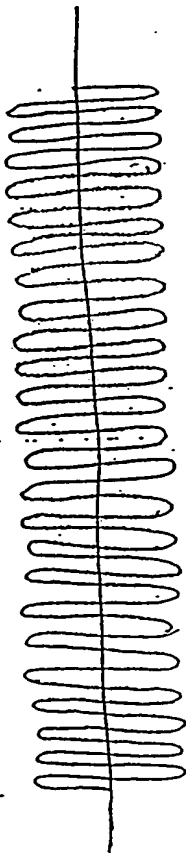
FIG. 5

FIG. 6A



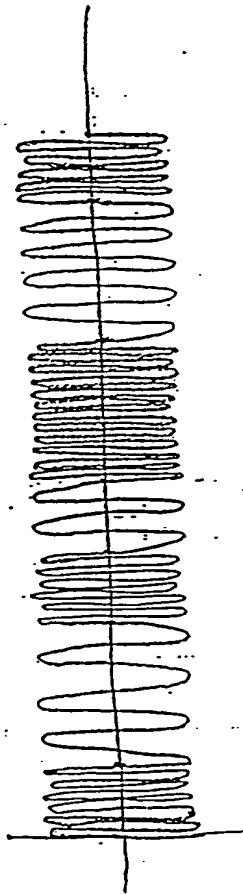
INFORMATION  
SIGNAL  
602

FIG. 6B



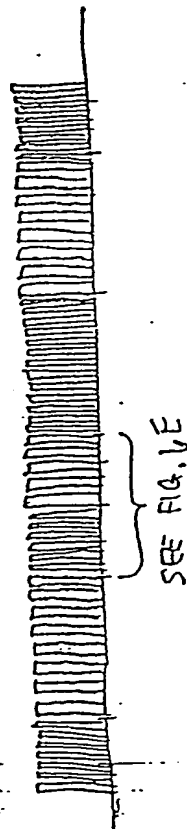
OSCILLATING  
SIGNAL  
604

FIG. 6C



FREQUENCY MODULATED  
INPUT SIGNAL  
606

FIG. 6D

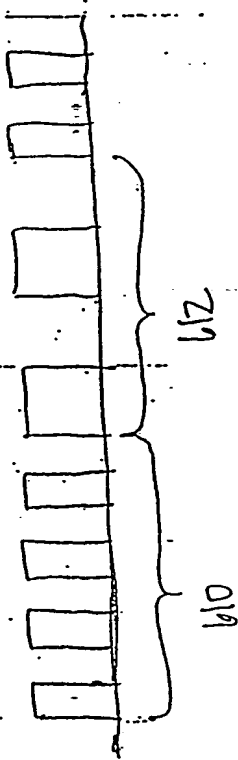


HARMONICALLY  
RICH SIGNAL  
(SHOWN AS SQUARE WAVE)  
608

FIG. 6

EXPANDED VIEW OF  
HARMONICALLY RICH  
SIGNAL 608

FIG. 6E



SEE FIG. 6F

SEE FIG. 6E

HARMONICS OF  
SIGNAL 610  
(SHOWN SEPARATELY)

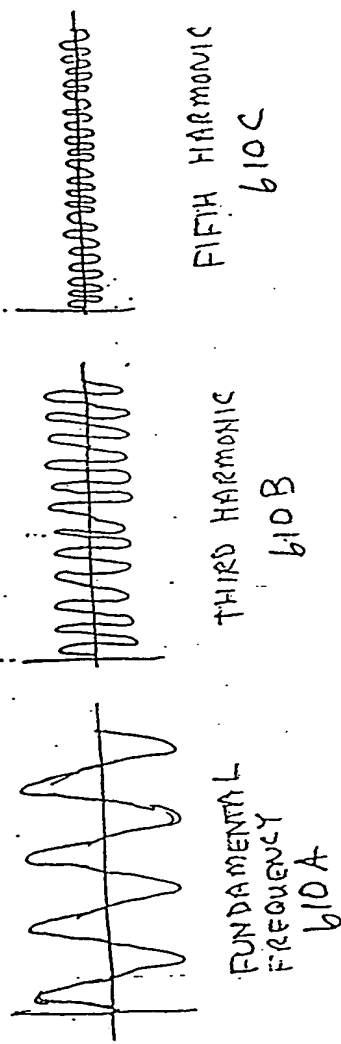


FIG. 6F

HARMONICS OF  
SIGNAL 612  
(SHOWN SEPARATELY)

FIG. 6G

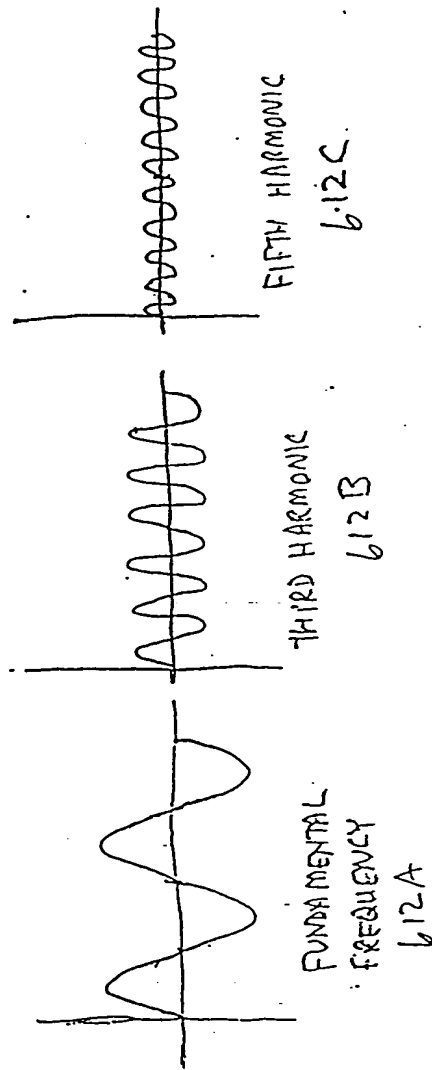


FIG. 6 (cont.)

m

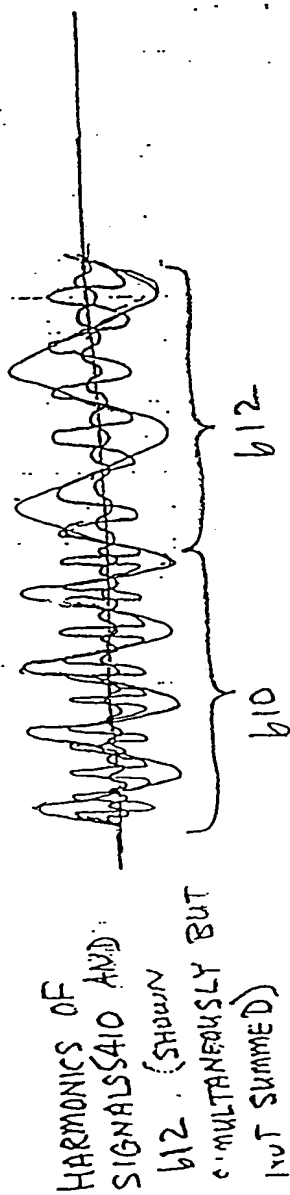


FIG 6H

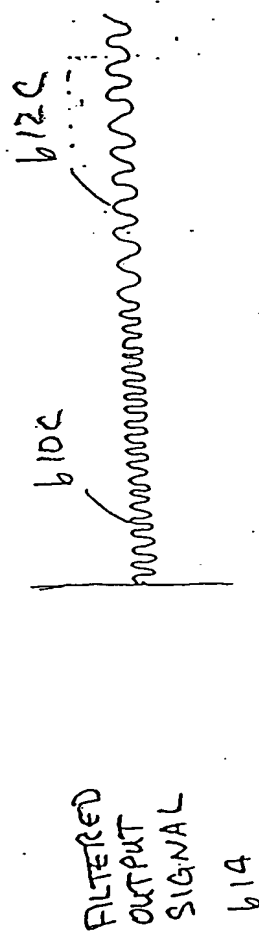


FIG. 6I

FIG 6 (cont)

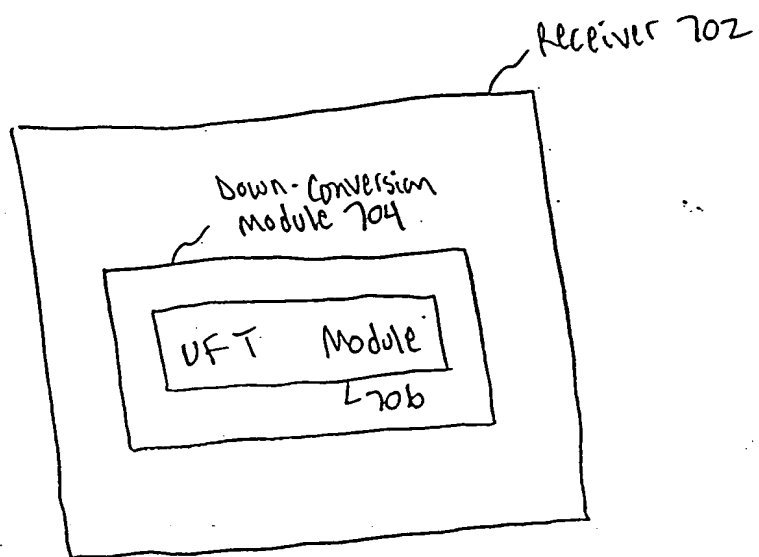


FIG. 7

00000-3322500

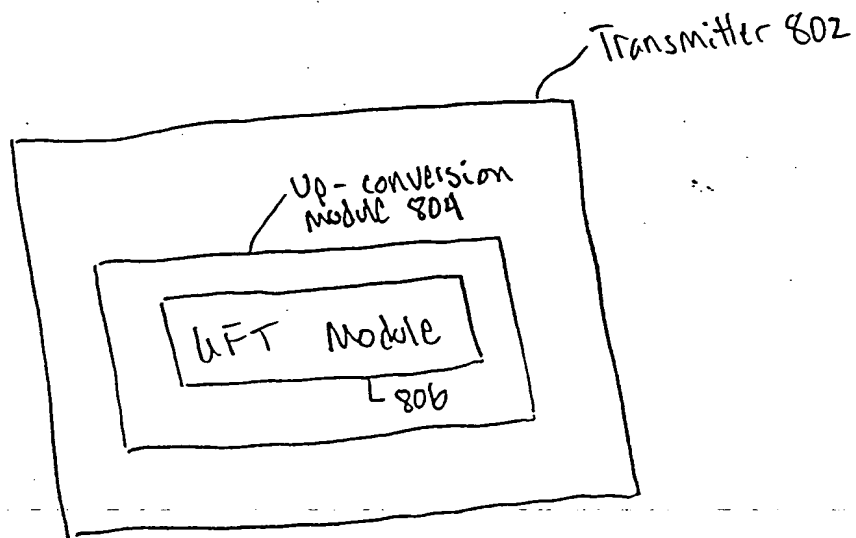


FIG. 8

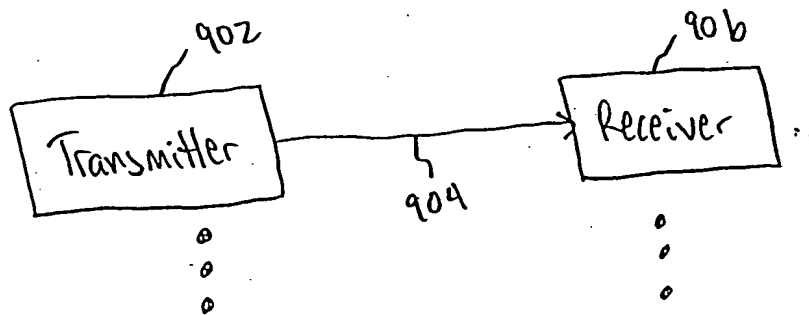
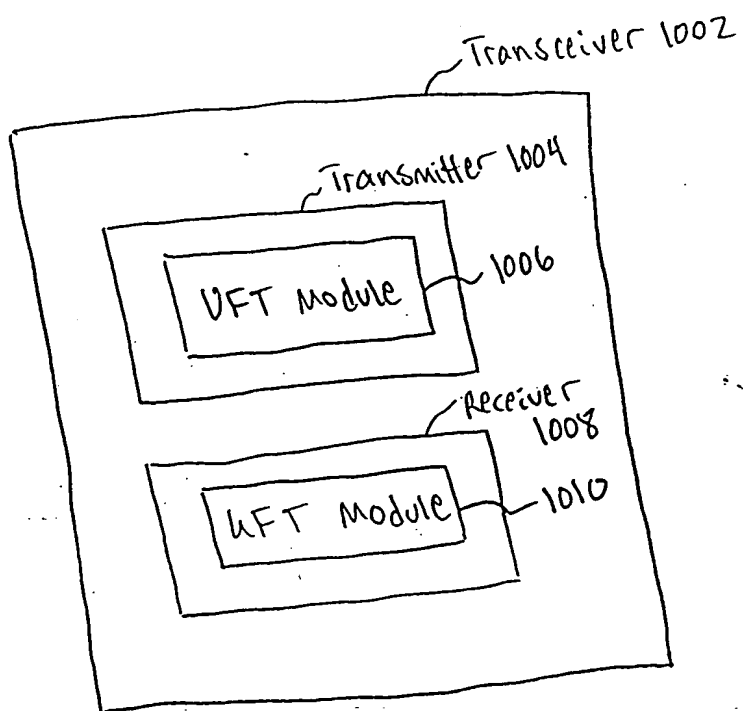


FIG. 9

000000-5522560





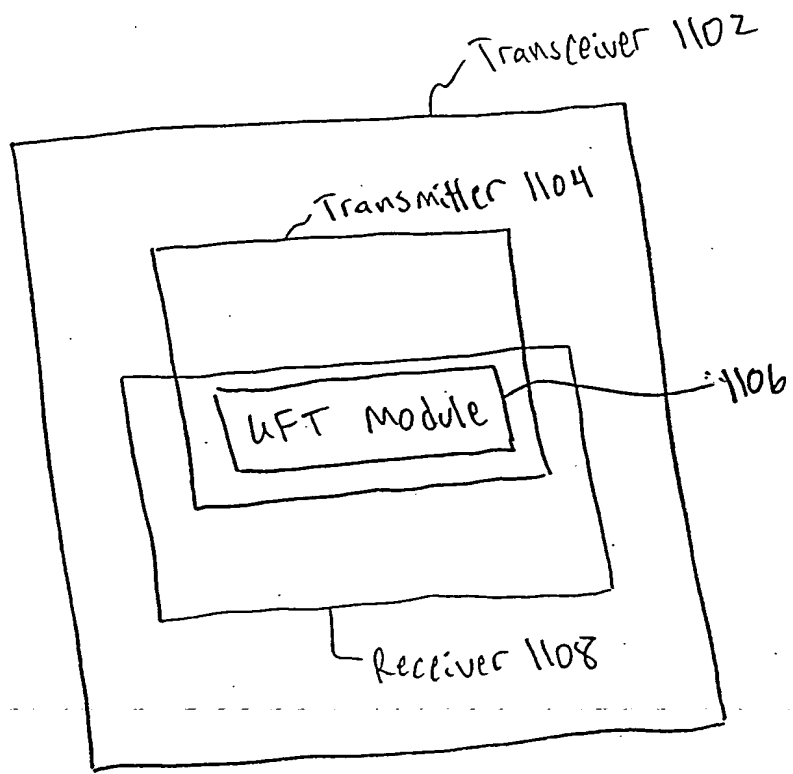


FIG. 11

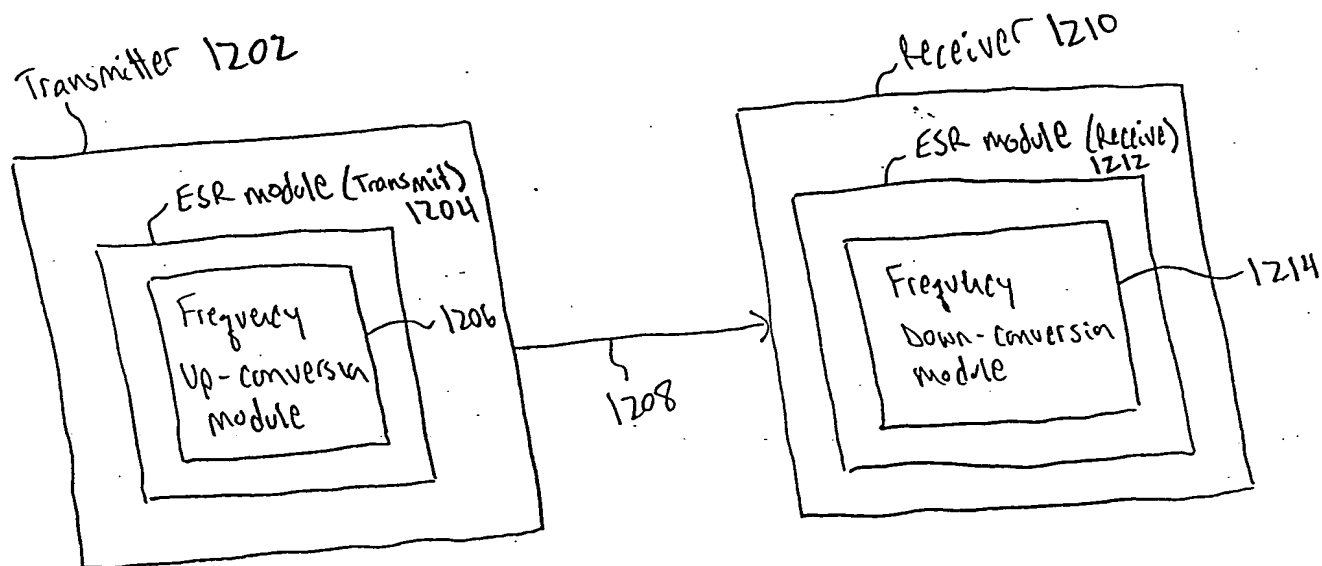


FIG. 12





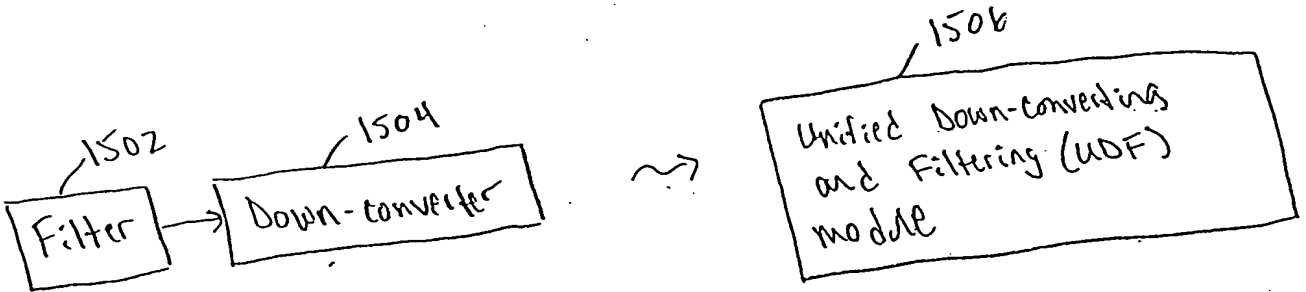


FIG. 15A

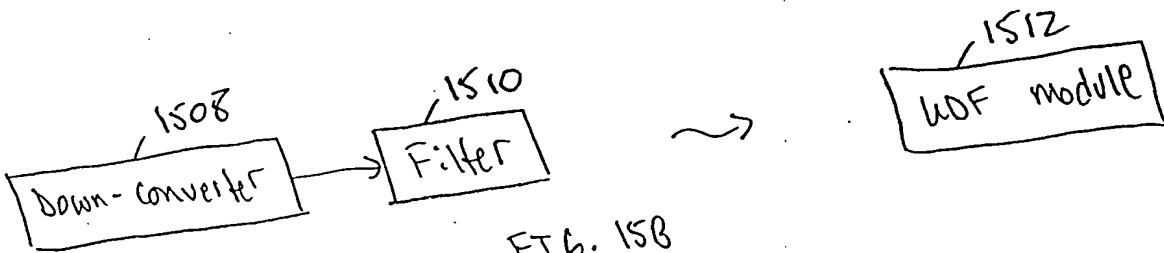


FIG. 15B

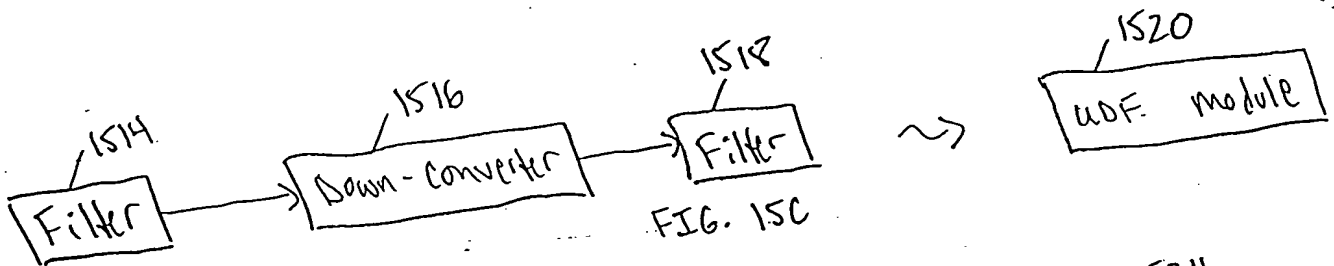


FIG. 15C

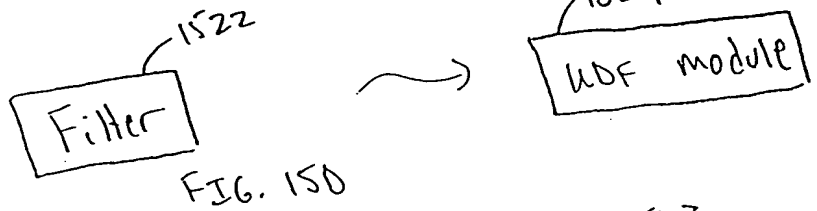


FIG. 15D

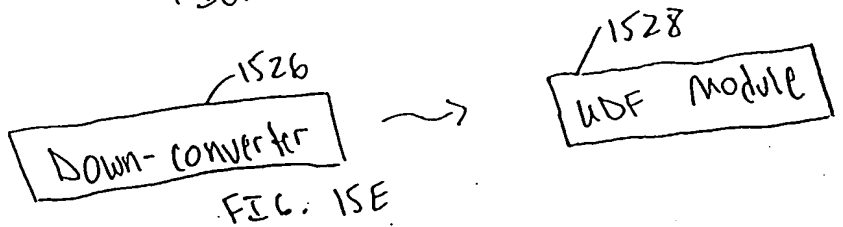


FIG. 15E

1530  
Amplifier

→

1532

WDF Module

FIG. 15F



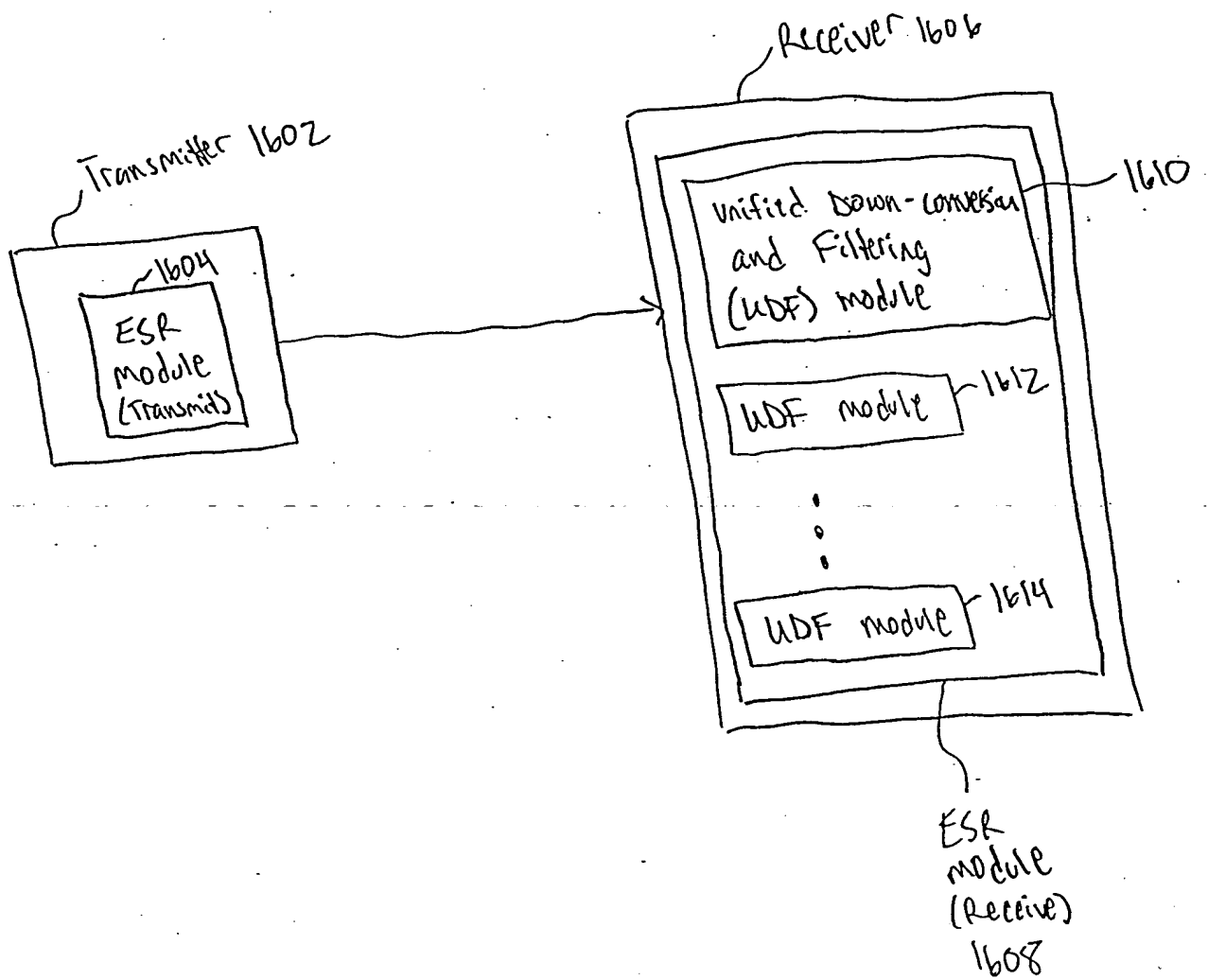


FIG. 16

## Unified Downconverting and Filtering (UDF) Module 1702.

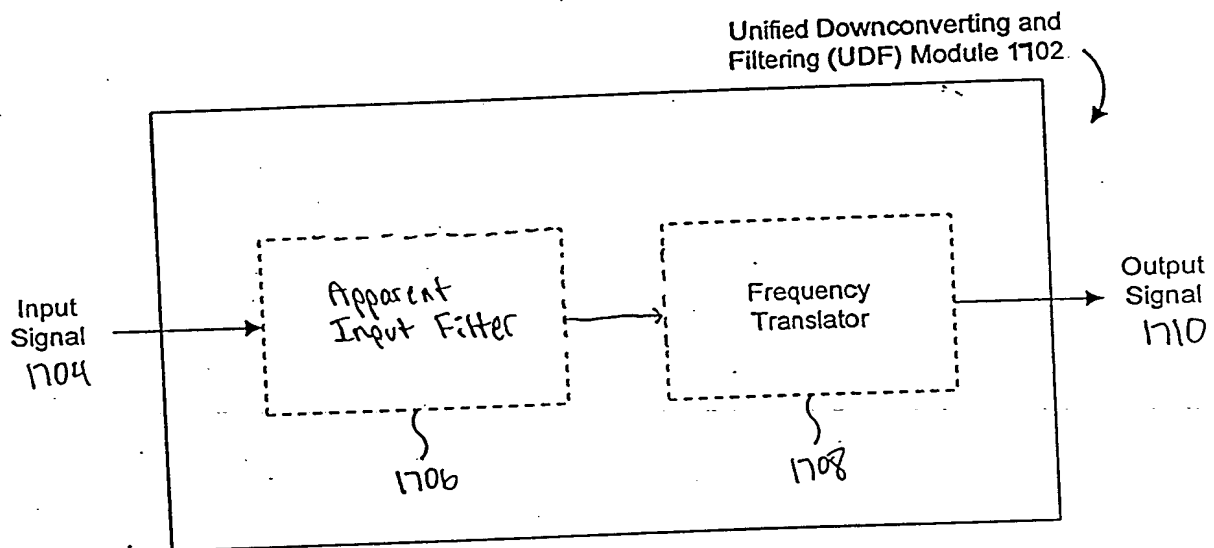


FIG. 17.





1802

Time Node	t-1 (rising edge of $\phi_1$ )	t-1 (rising edge of $\phi_2$ )	t (rising edge of $\phi_1$ )	t (rising edge of $\phi_2$ )	t+1 (rising edge of $\phi_1$ )
1902	$VI_{t-1}$ <u>1804</u>	$VI_{t-1}$ <u>1808</u>	$VI_t$ <u>1816</u>	$VI_t$ <u>1826</u>	$VI_{t+1}$ <u>1838</u>
1904	—	$VI_{t-1}$ <u>1810</u>	$VI_{t-1}$ <u>1818</u>	$VI_t$ <u>1828</u>	$VI_t$ <u>1840</u>
1906	$VO_{t-1}$ <u>1806</u>	$VO_{t-1}$ <u>1812</u>	$VO_t$ <u>1820</u>	$VO_t$ <u>1830</u>	$VO_{t+1}$ <u>1842</u>
1908	—	$VO_{t-1}$ <u>1814</u>	$VO_{t-1}$ <u>1822</u>	$VO_t$ <u>1832</u>	$VO_t$ <u>1844</u>
1910	— <u>1807</u>	—	$VO_{t-1}$ <u>1824</u>	$VO_{t-1}$ <u>1834</u>	$VO_t$ <u>1846</u>
1912	—	— <u>1815</u>	—	$VO_{t-1}$ <u>1836</u>	$VO_{t-1}$ <u>1848</u>
1918	—	—	—	—	$VI_t$ <u>1850</u> $0.1 * VO_t$ $0.8 * VO_{t-1}$

FIG. 18

← 1997-2000

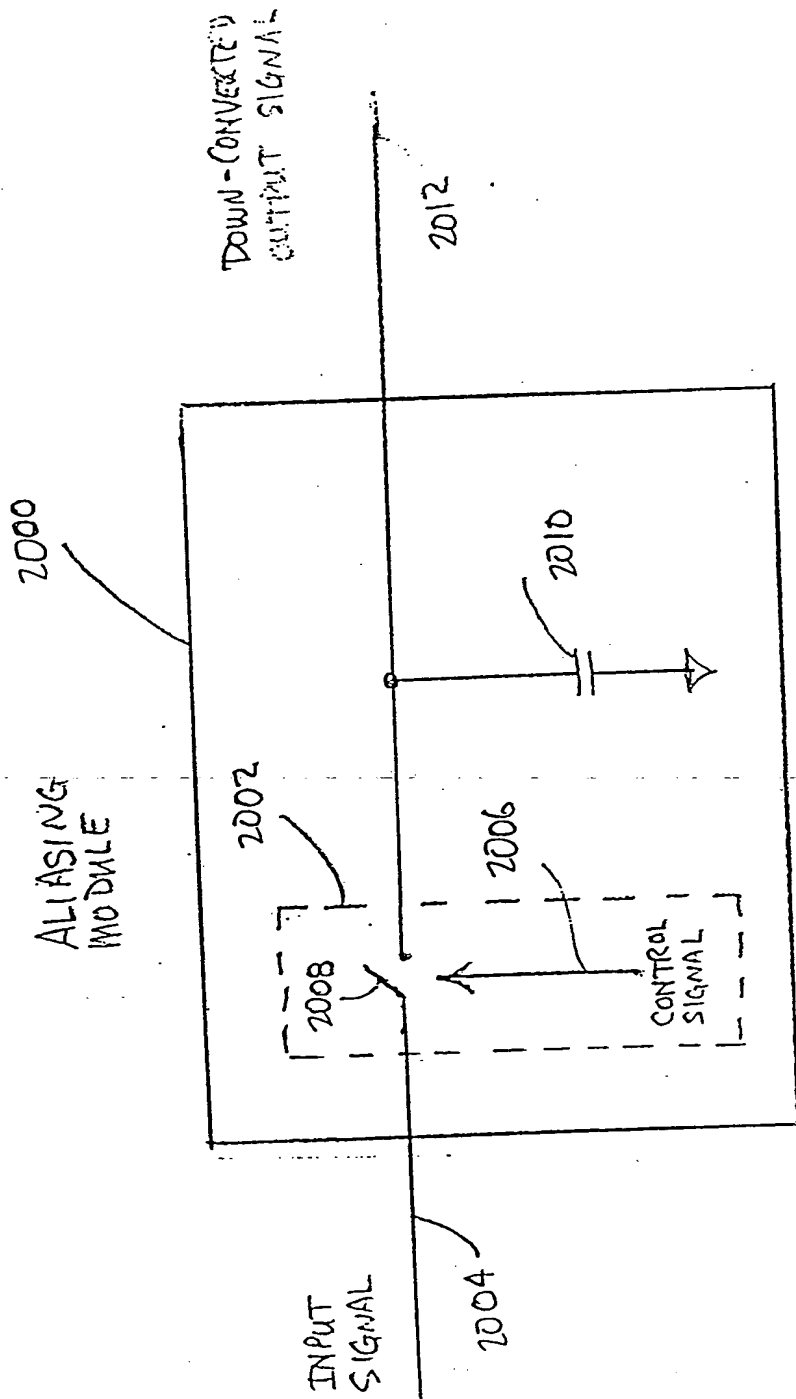
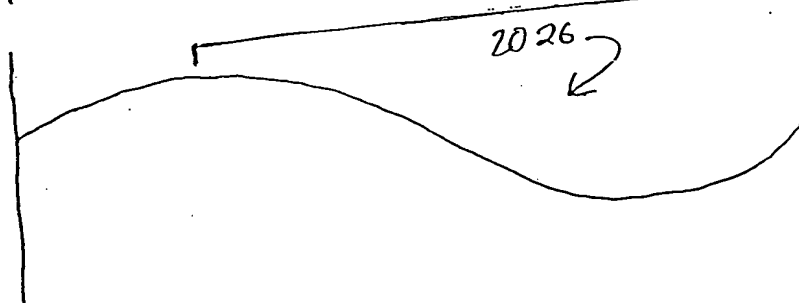
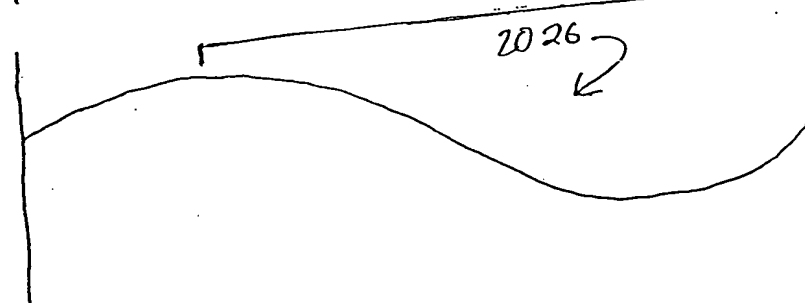
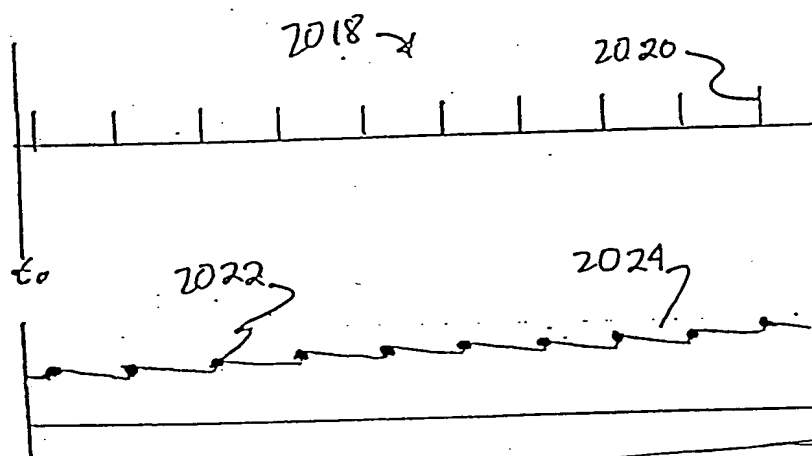
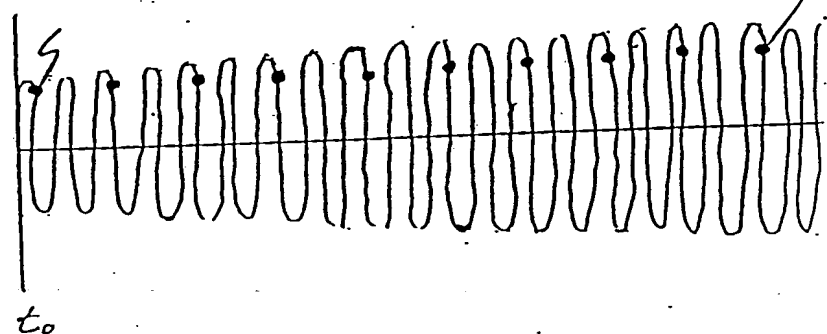
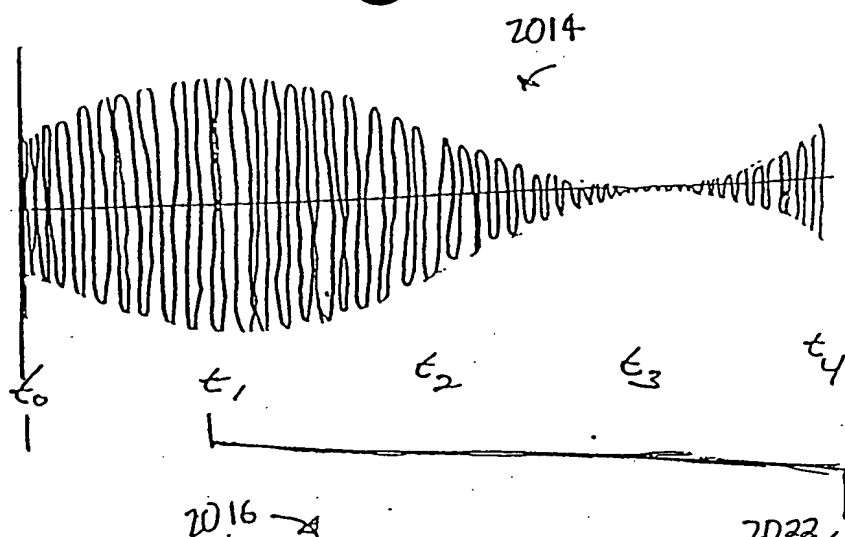


FIG. 20A





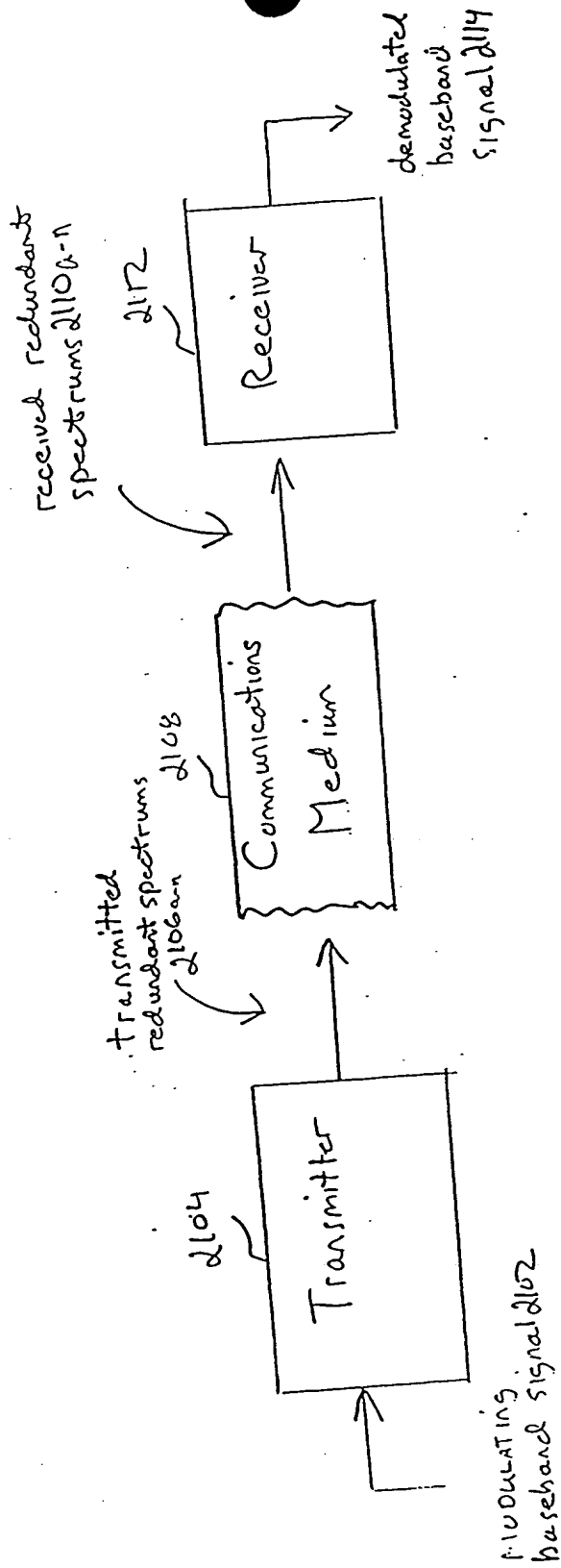
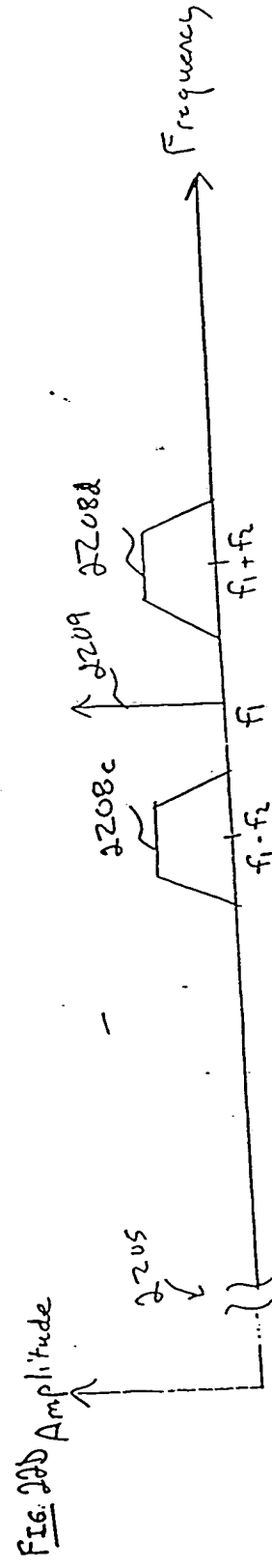
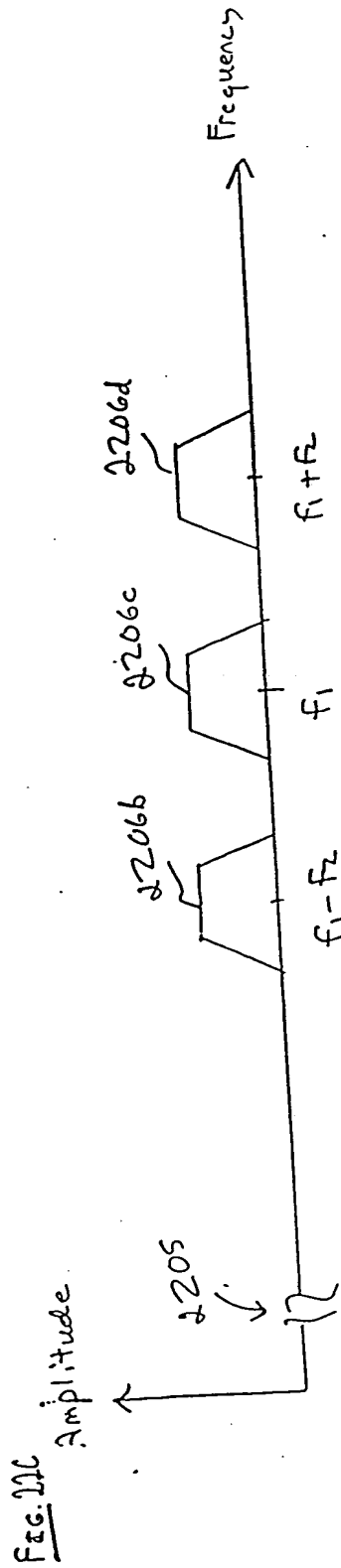
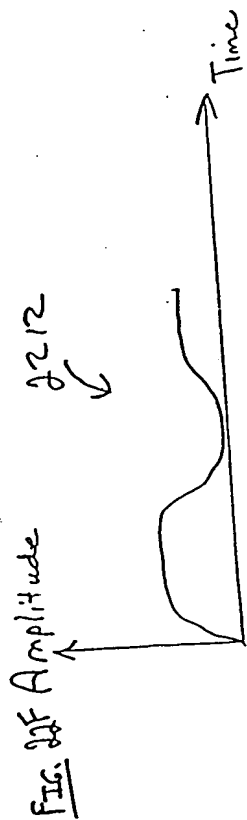
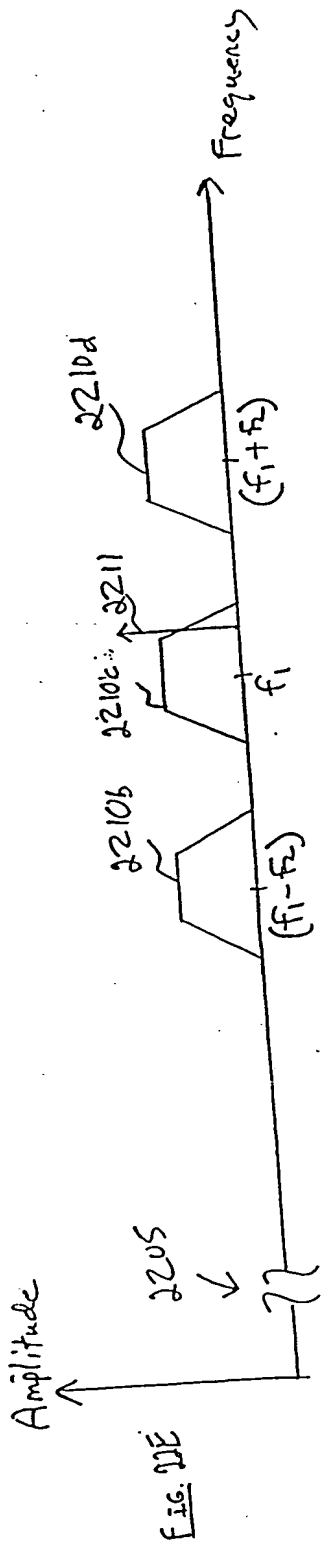


Fig. 21



**FIG. 22B**







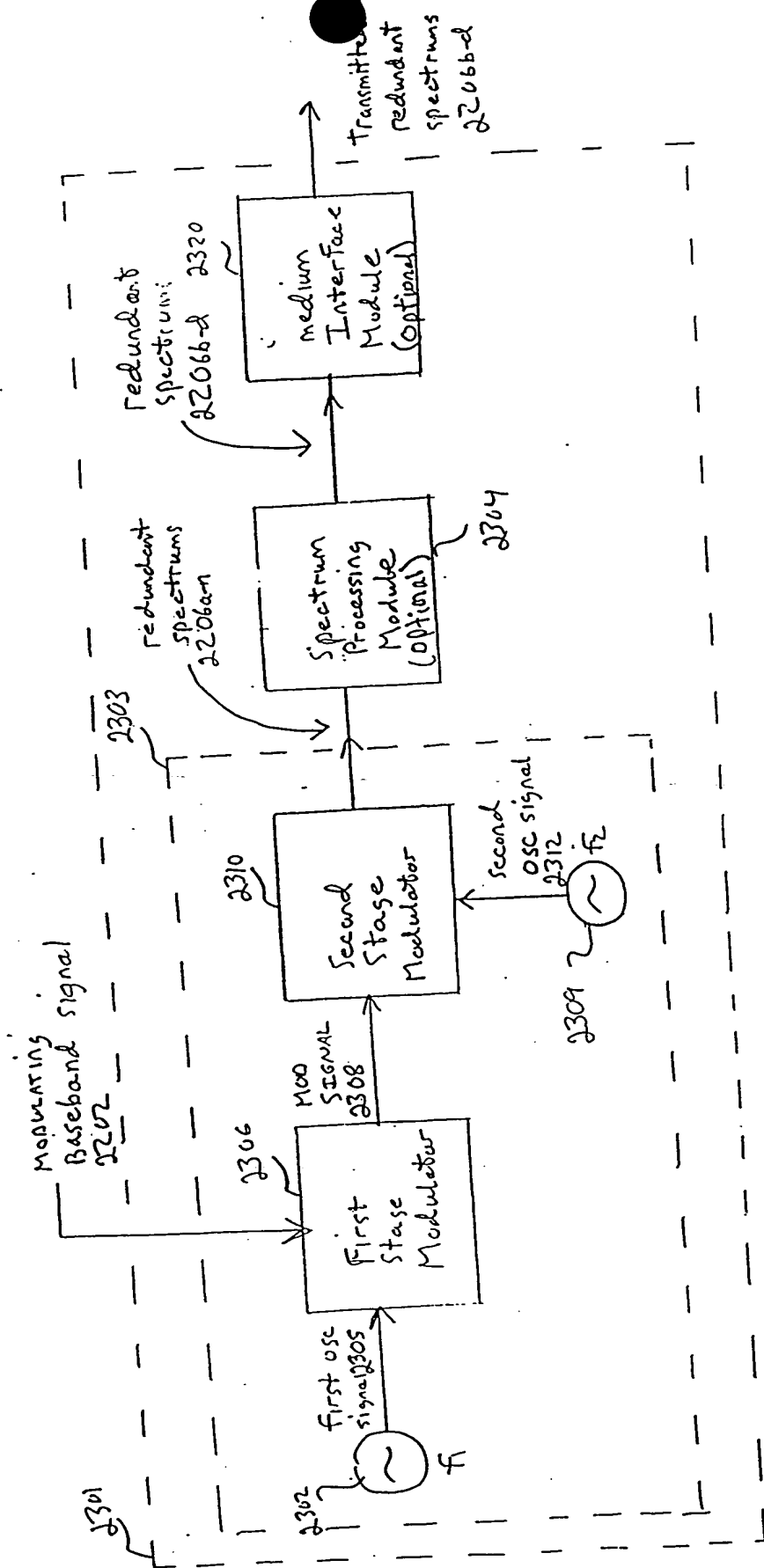
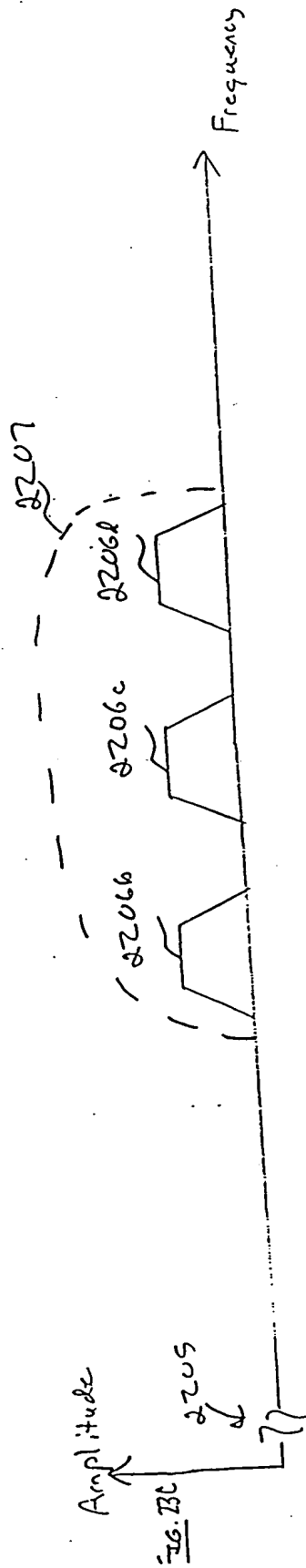
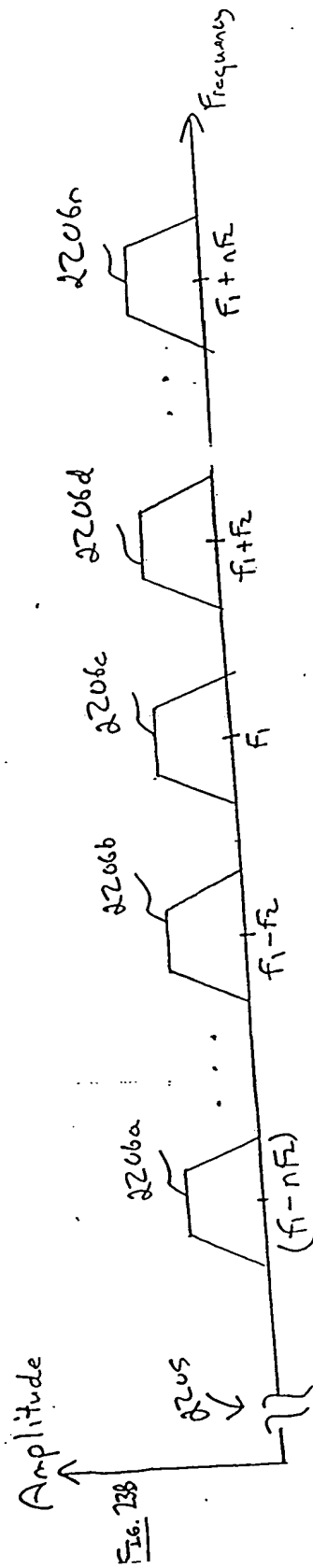


FIG. 23A



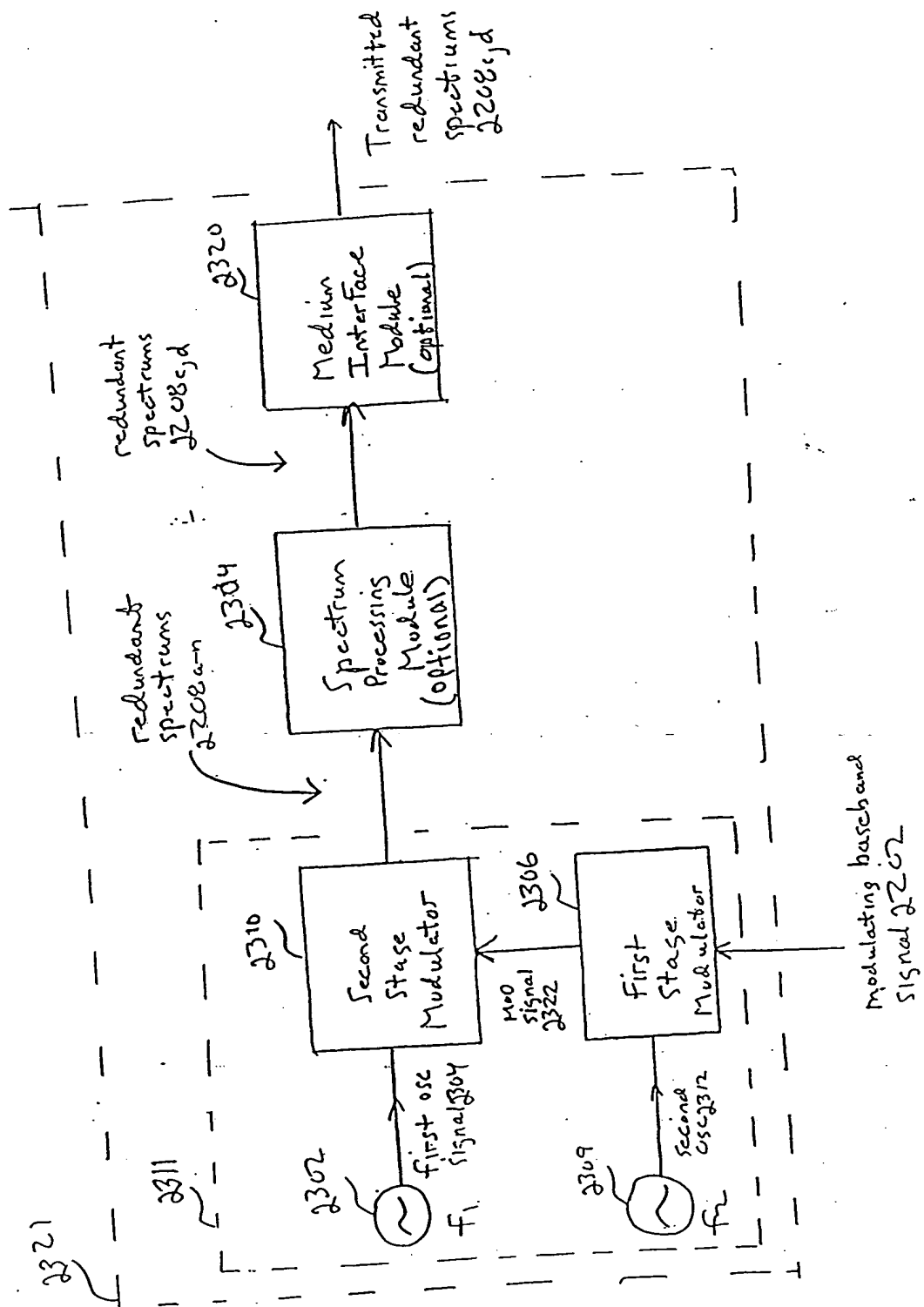


FIG. 23D

FIG. 23E

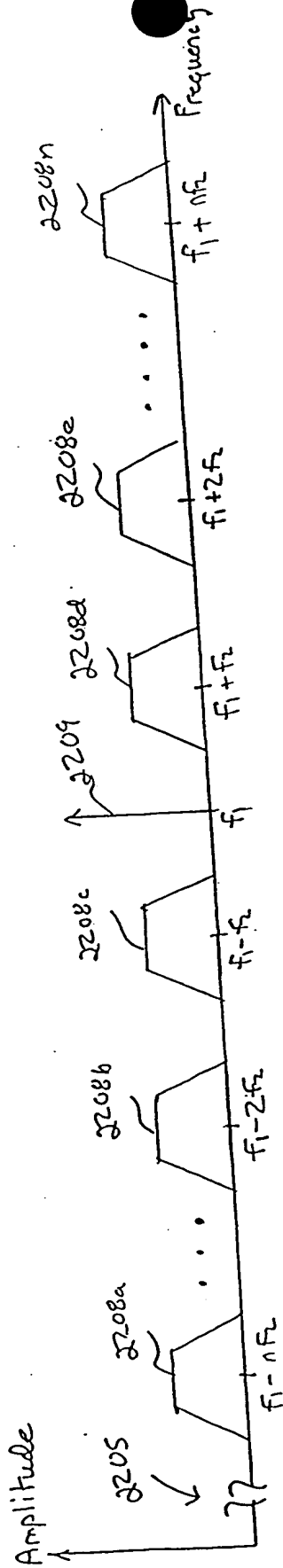
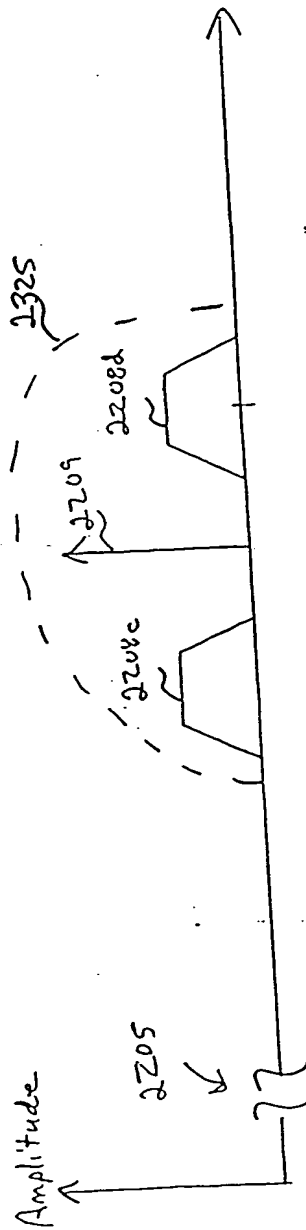


FIG. 23F



2414

2423

2408

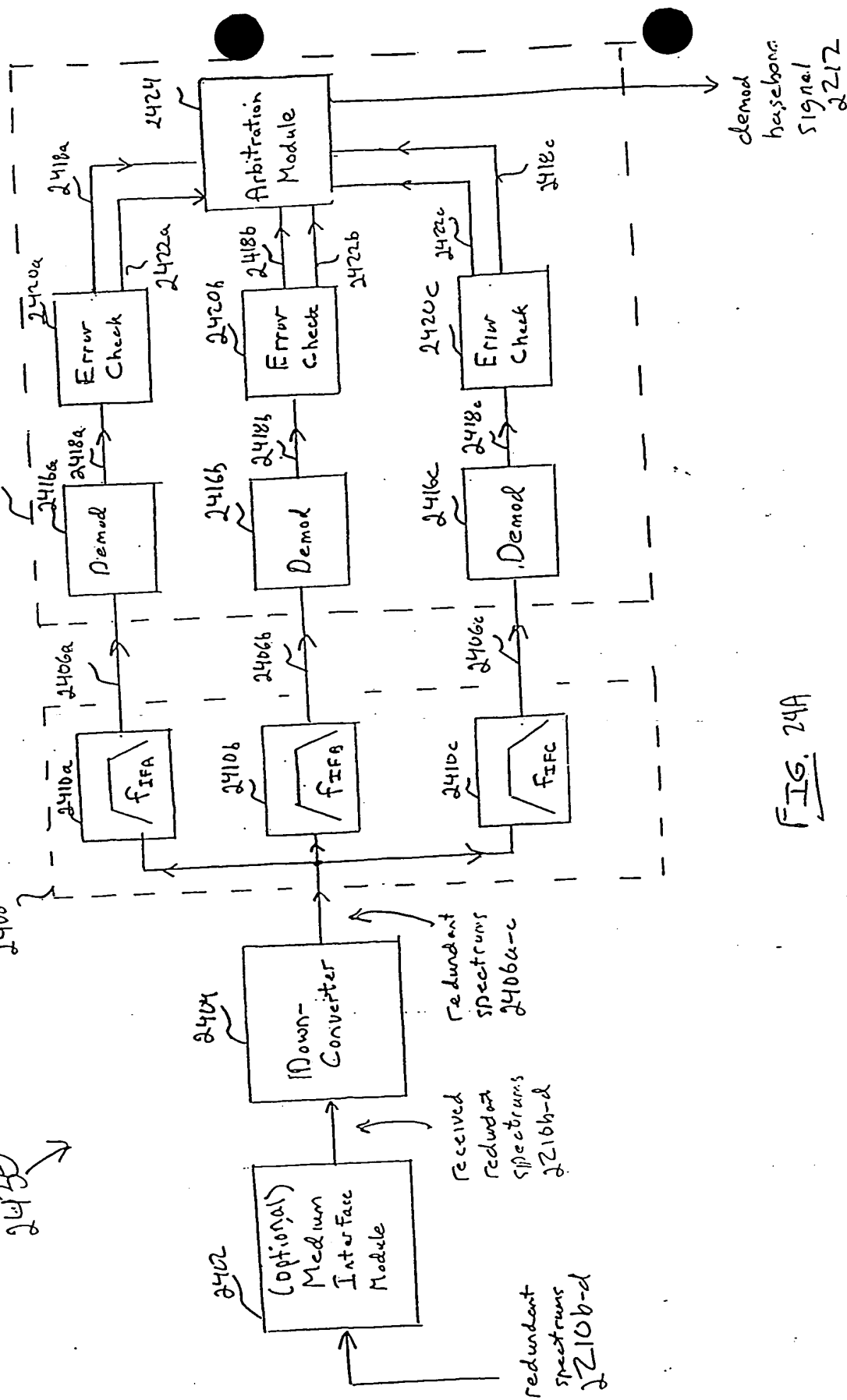
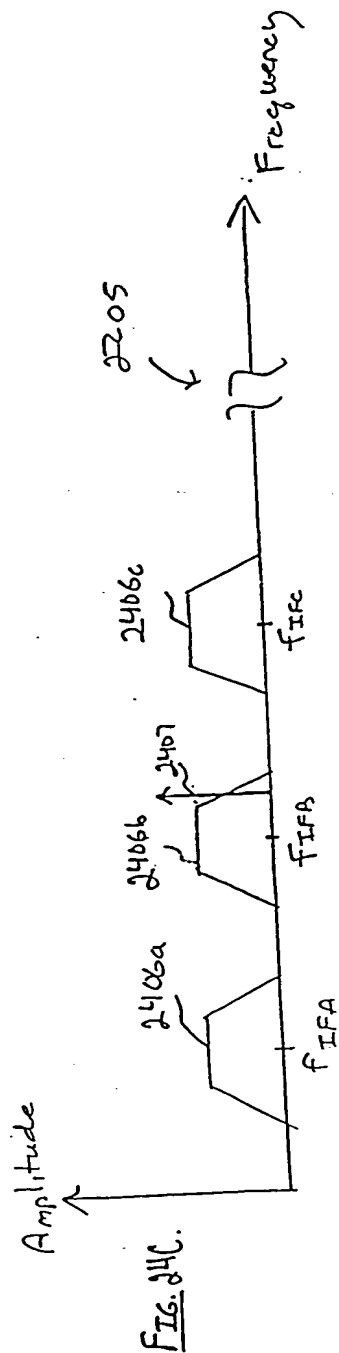
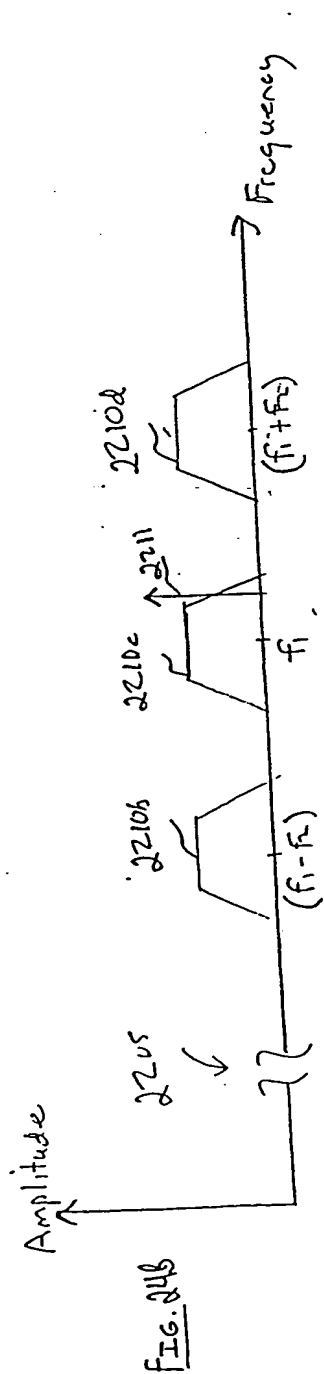
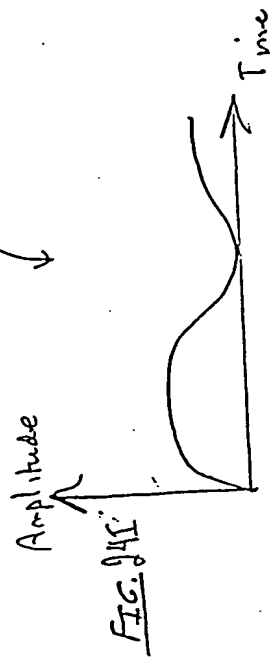
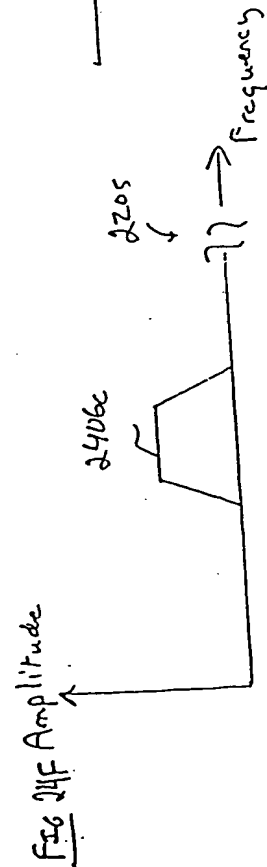
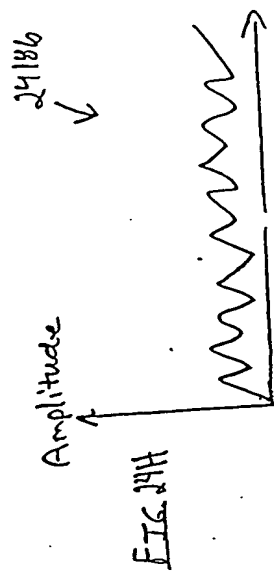
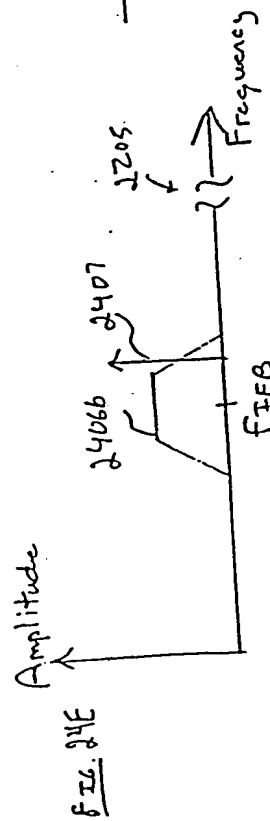
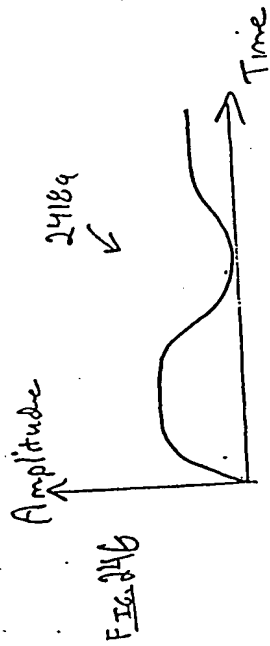
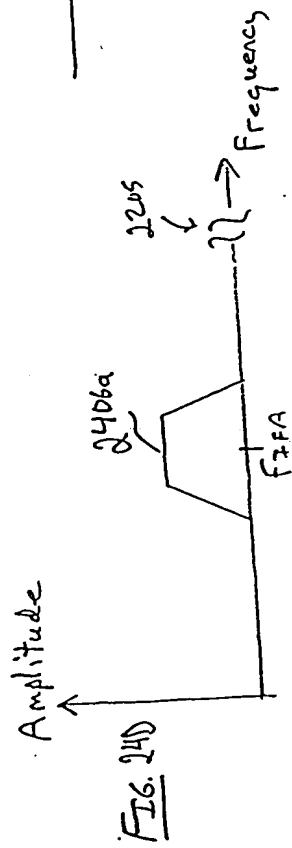


FIG. 24A









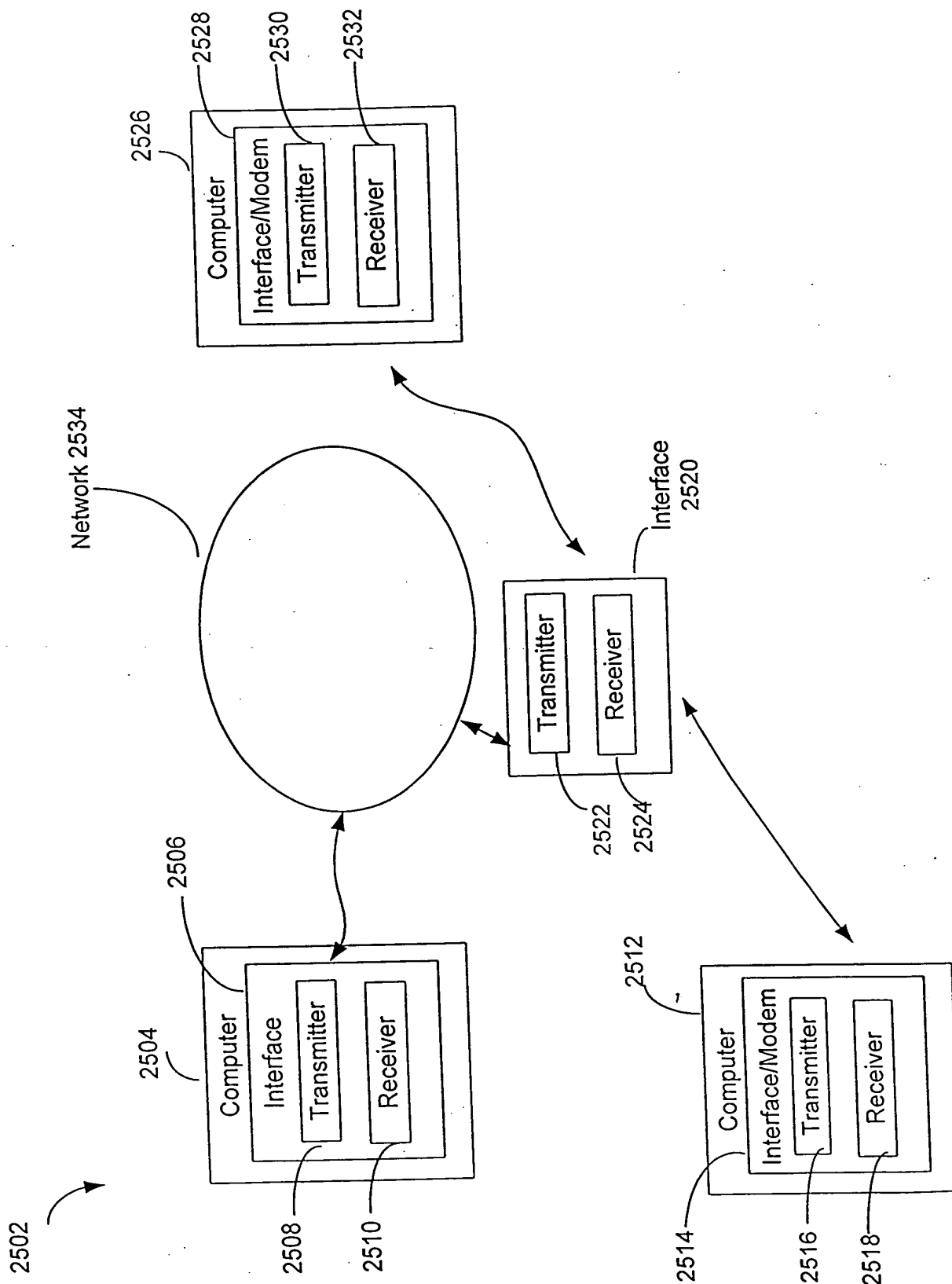


FIG. 25

2606

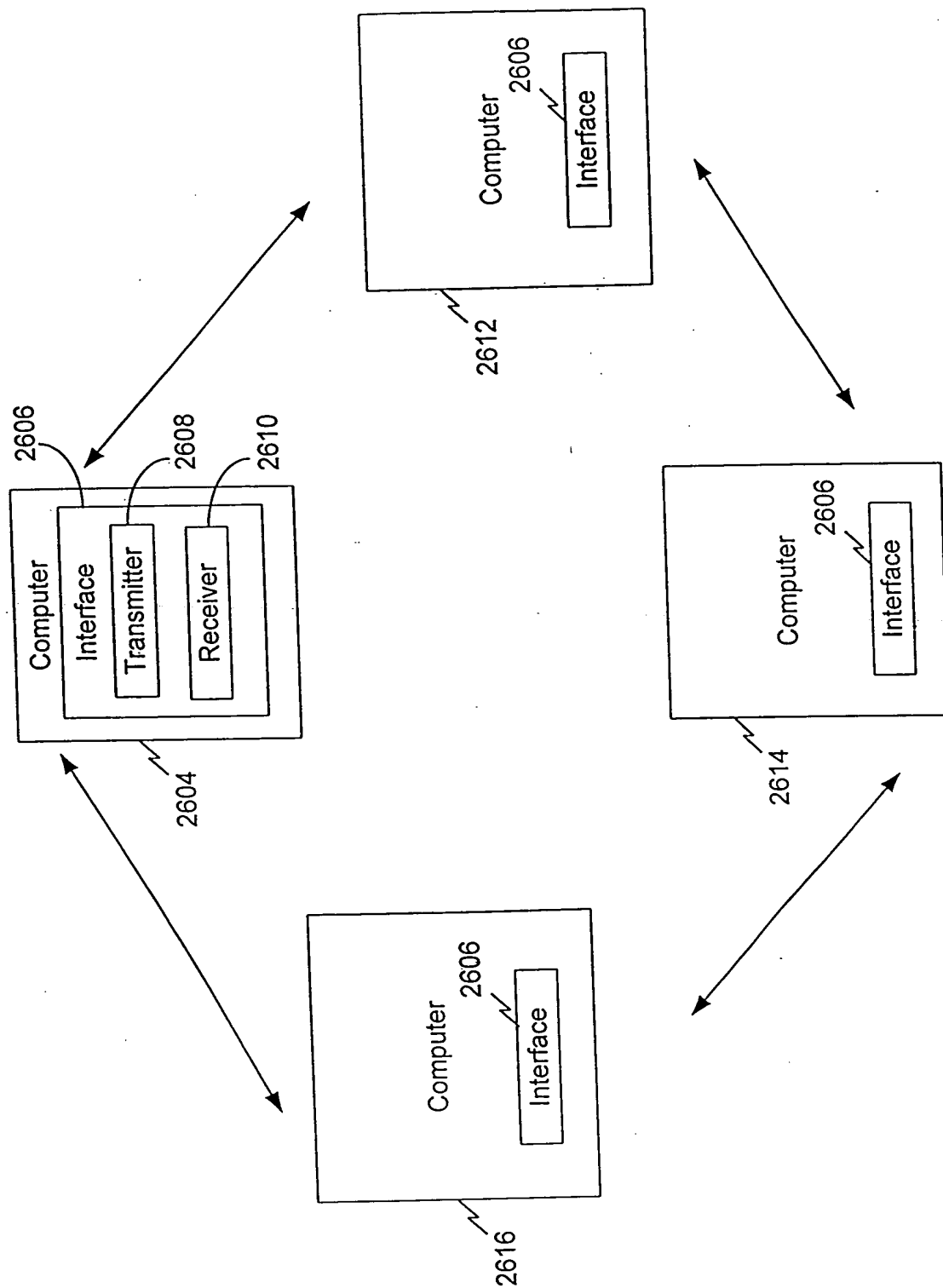
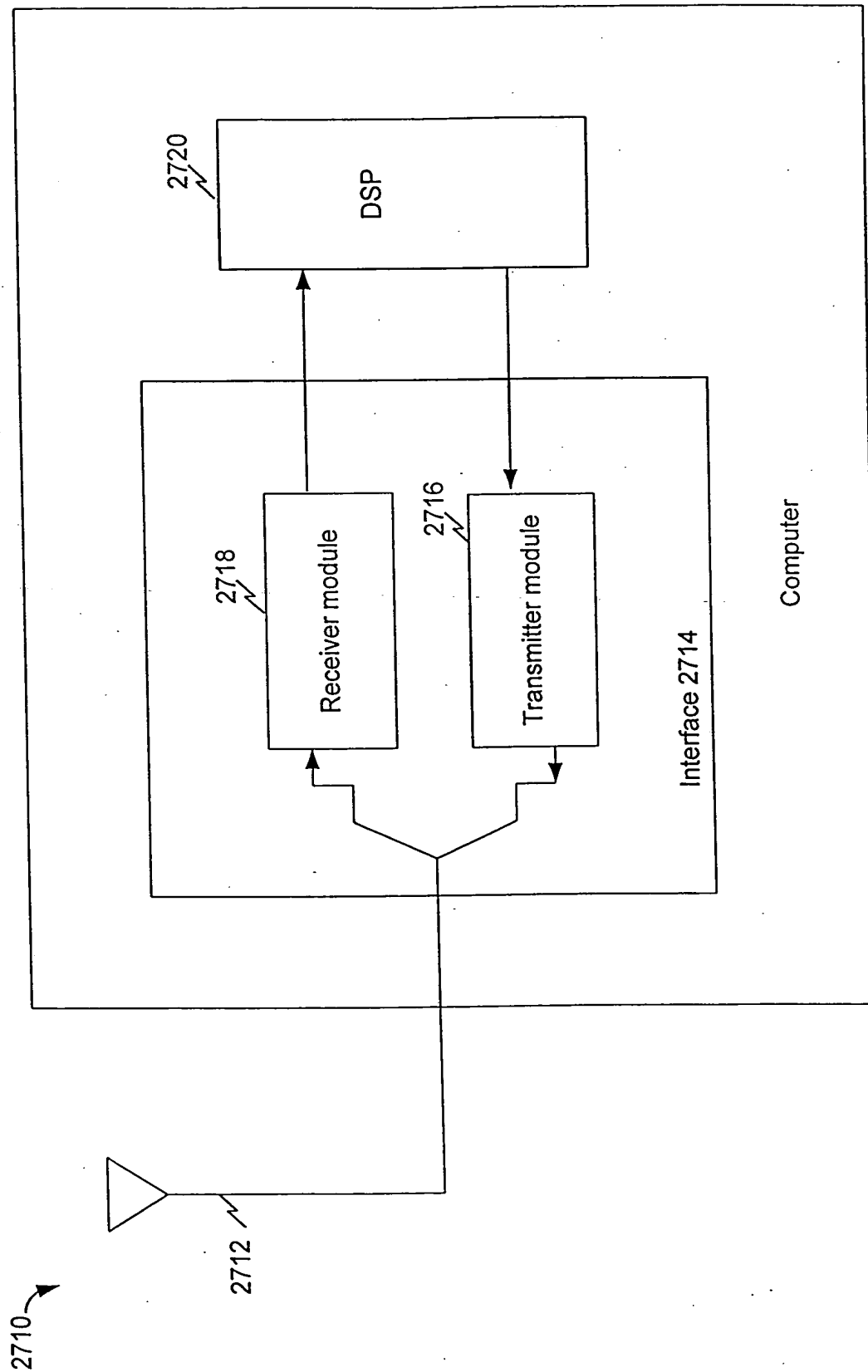
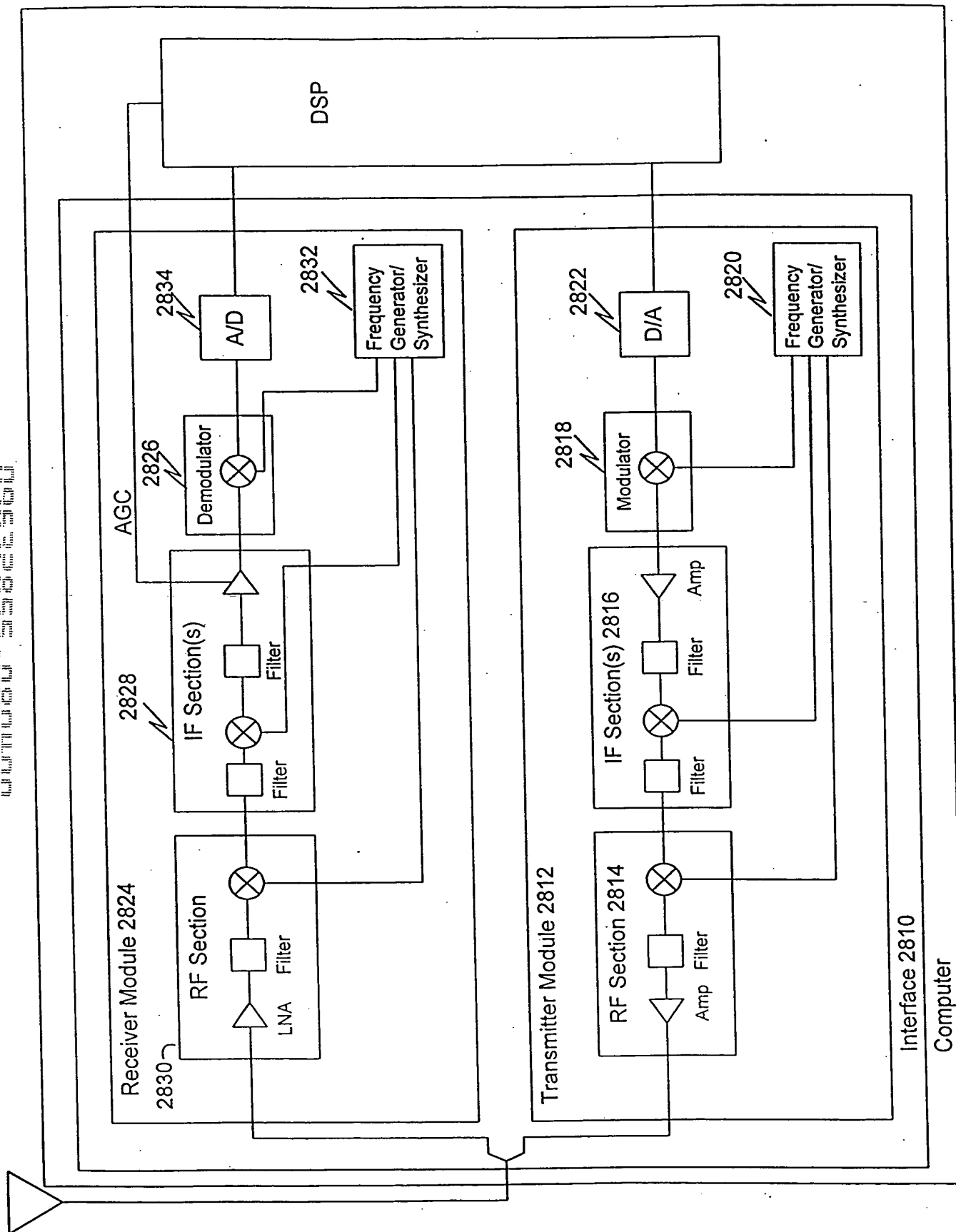


FIG. 26

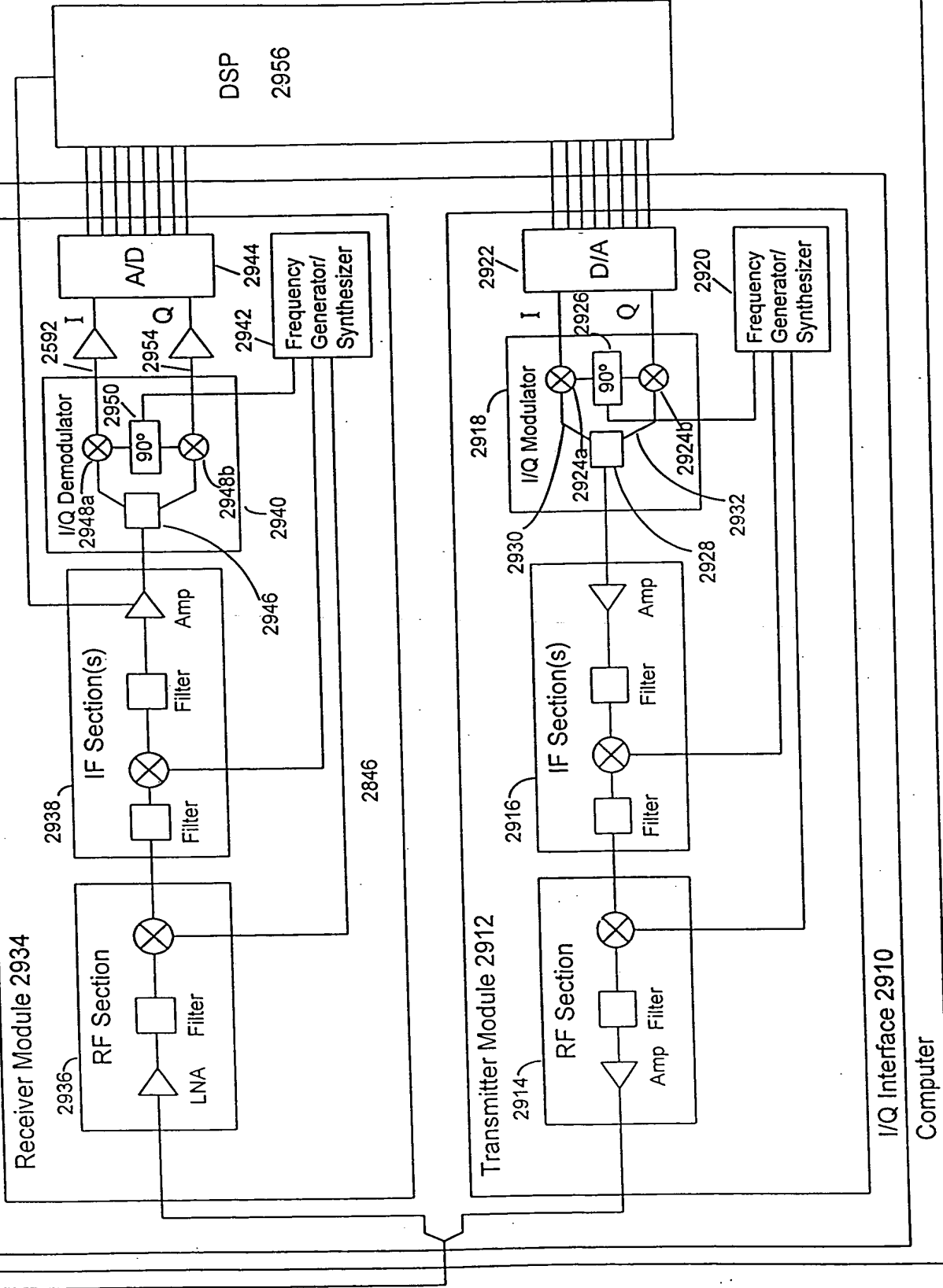


**FIG. 27**



Heterodyne Implementation

FIG. 28



**FIG. 29**

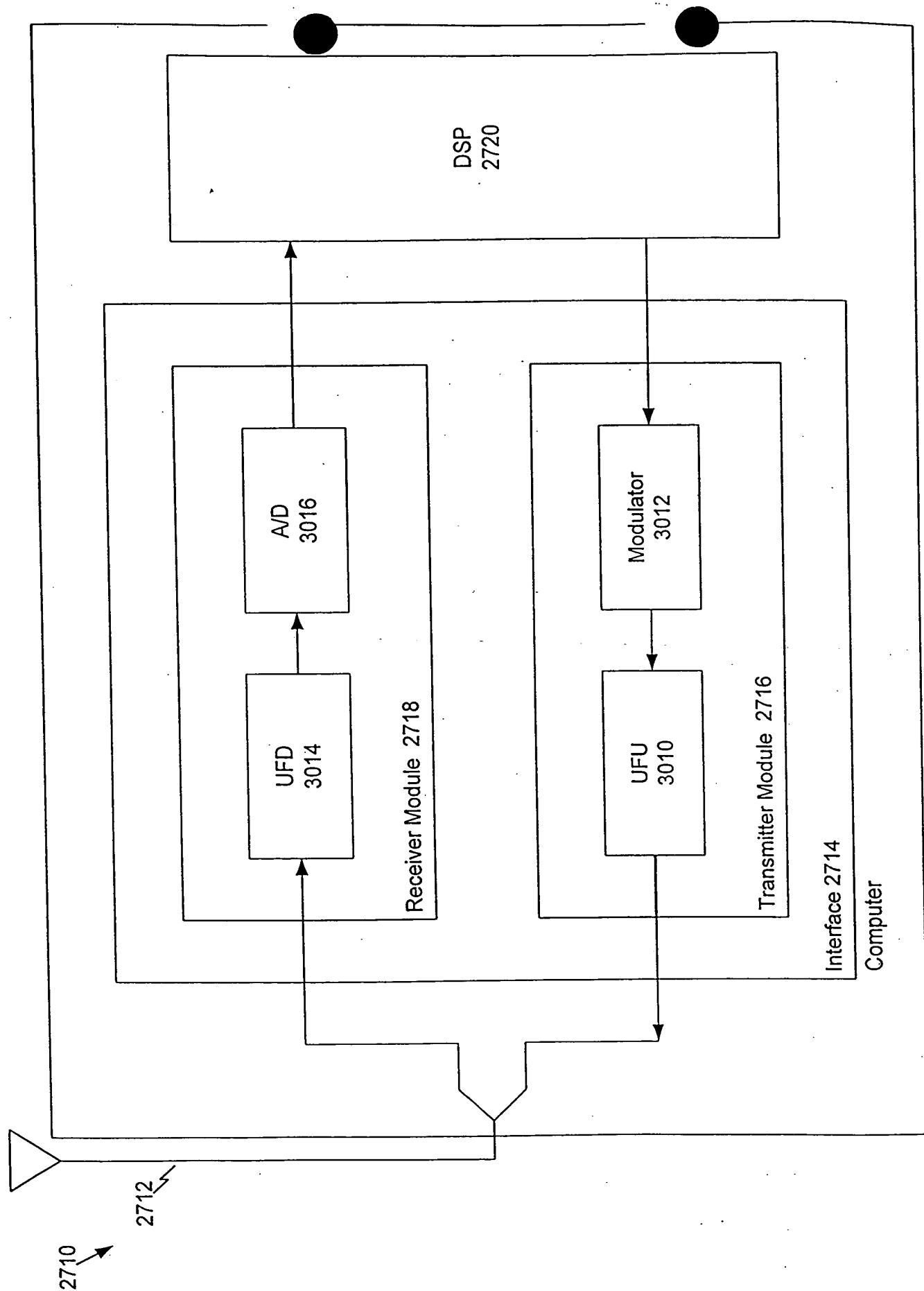
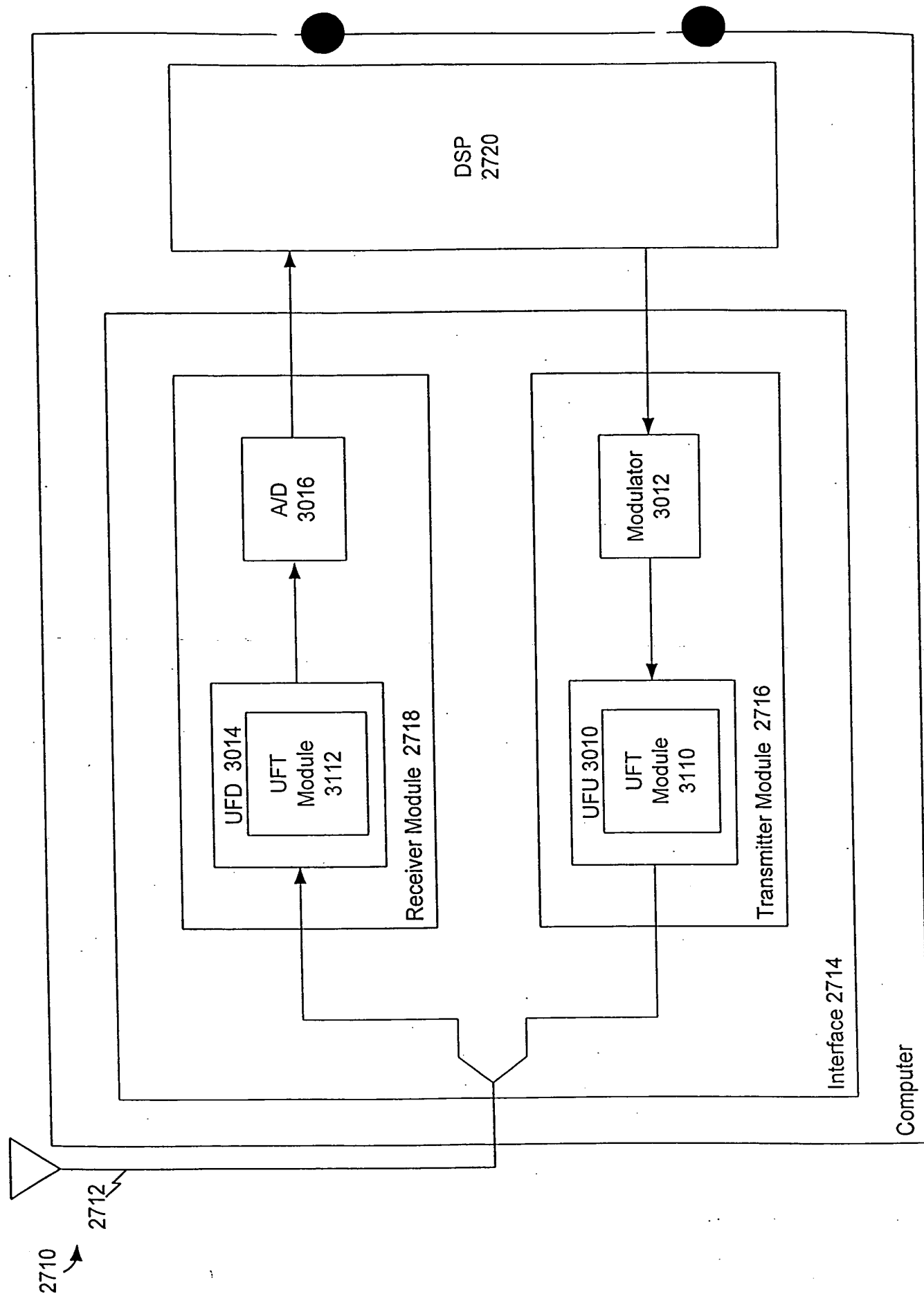


FIG. 30



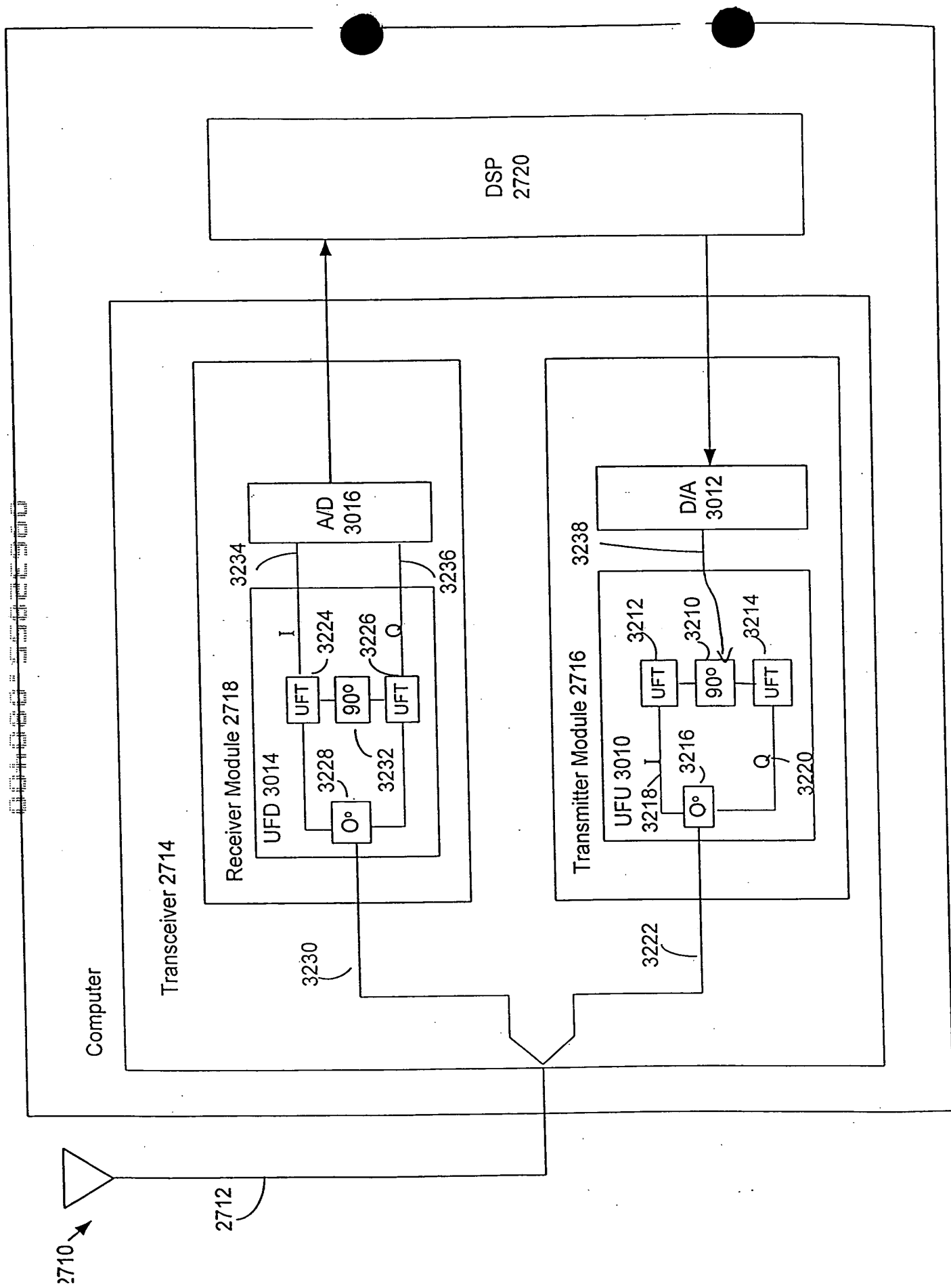


FIG. 32



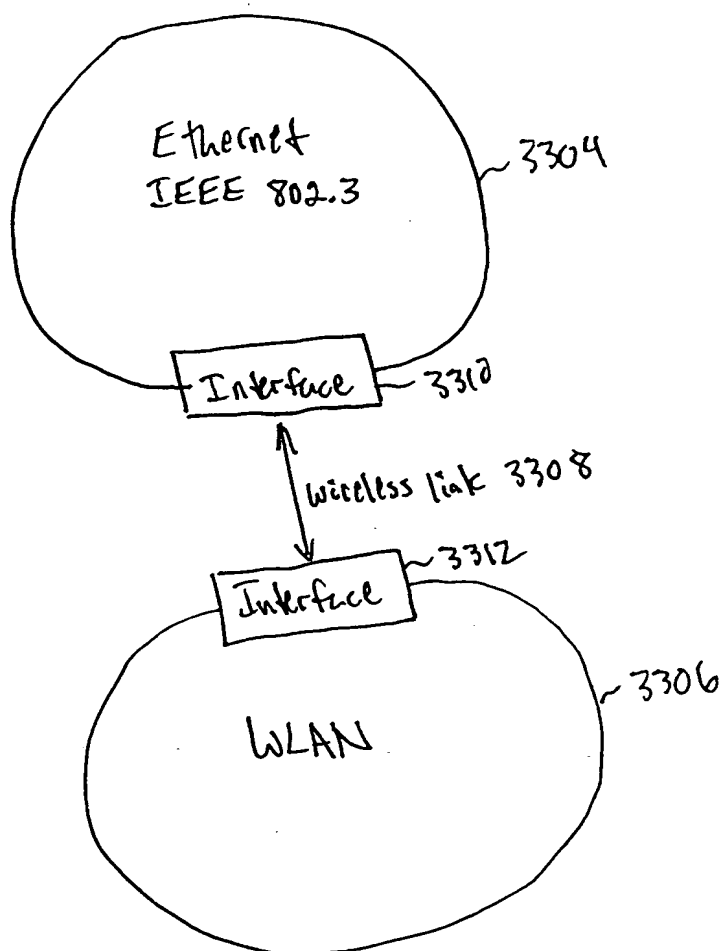
[illegible]

FIG. 33

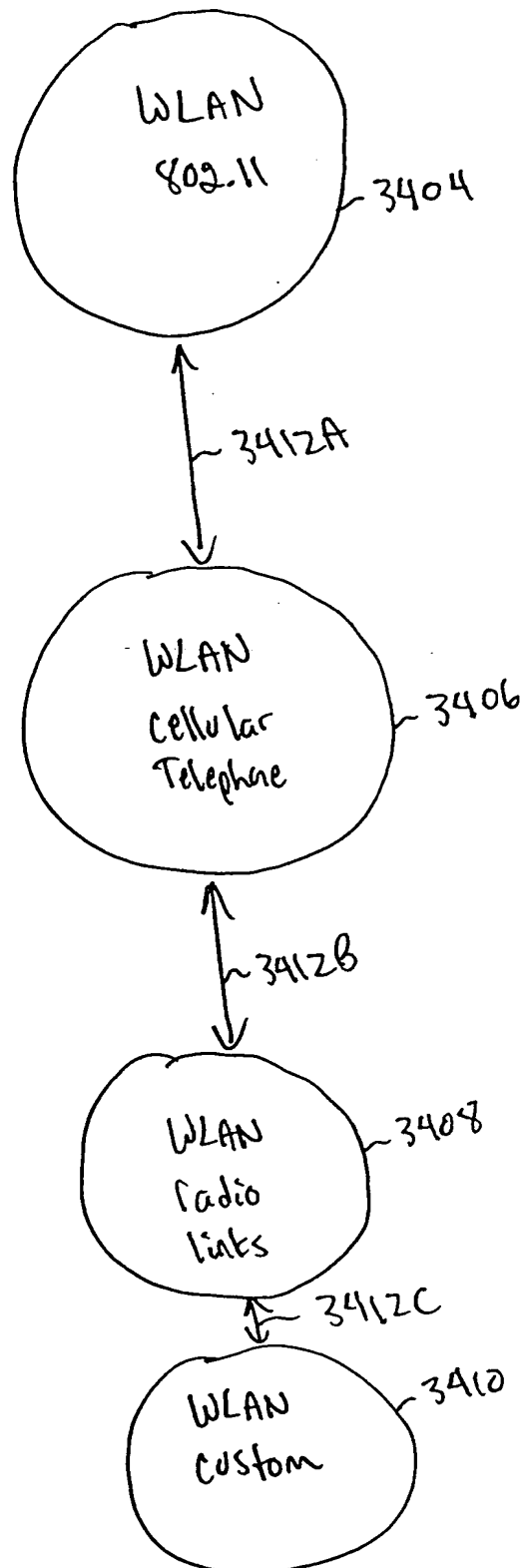
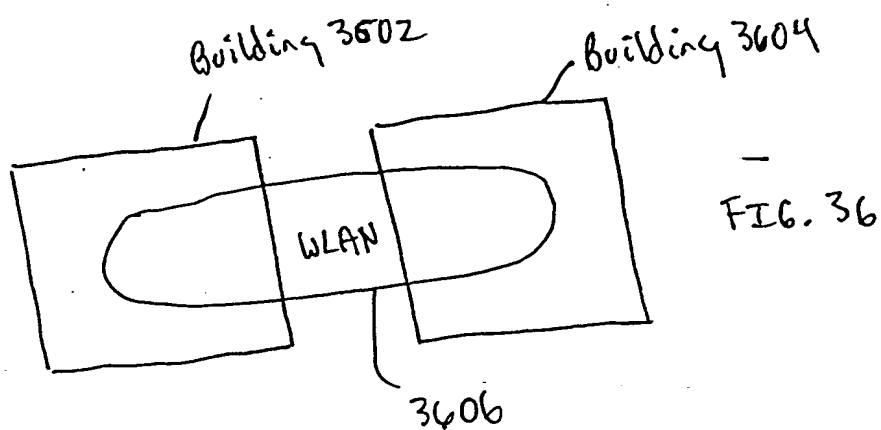
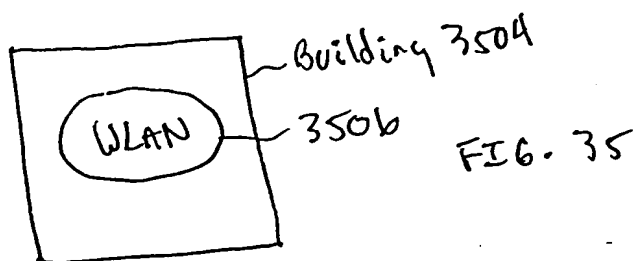


FIG. 34

3502



004000 9822560

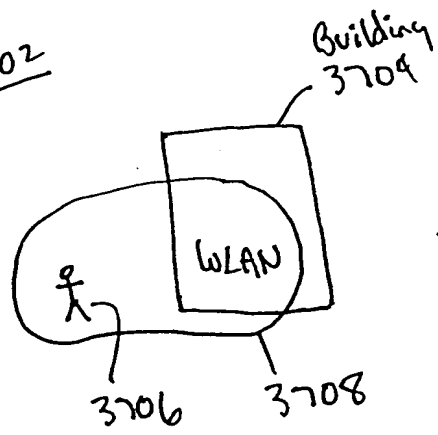


FIG. 37



FILE 38

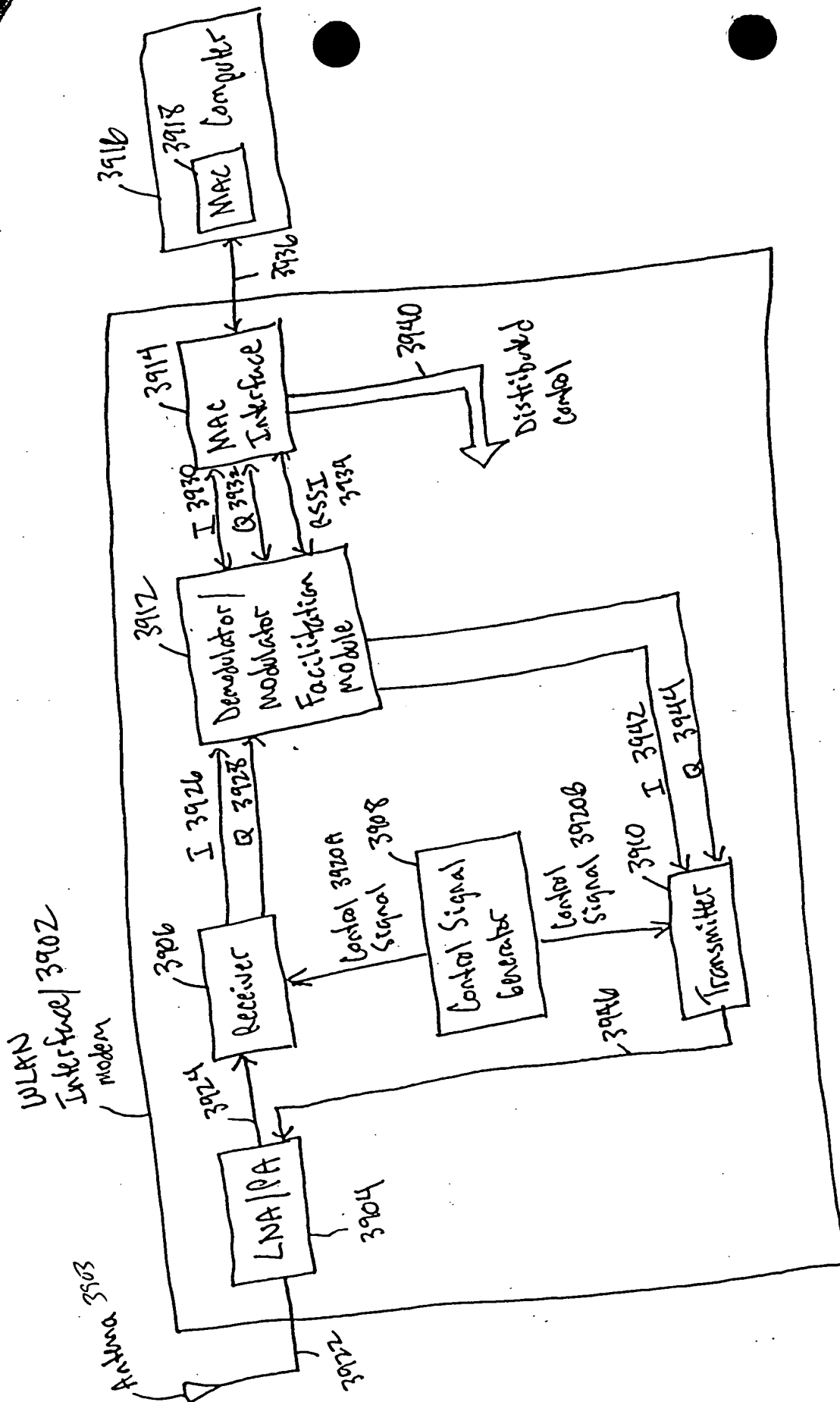


FIG. 39

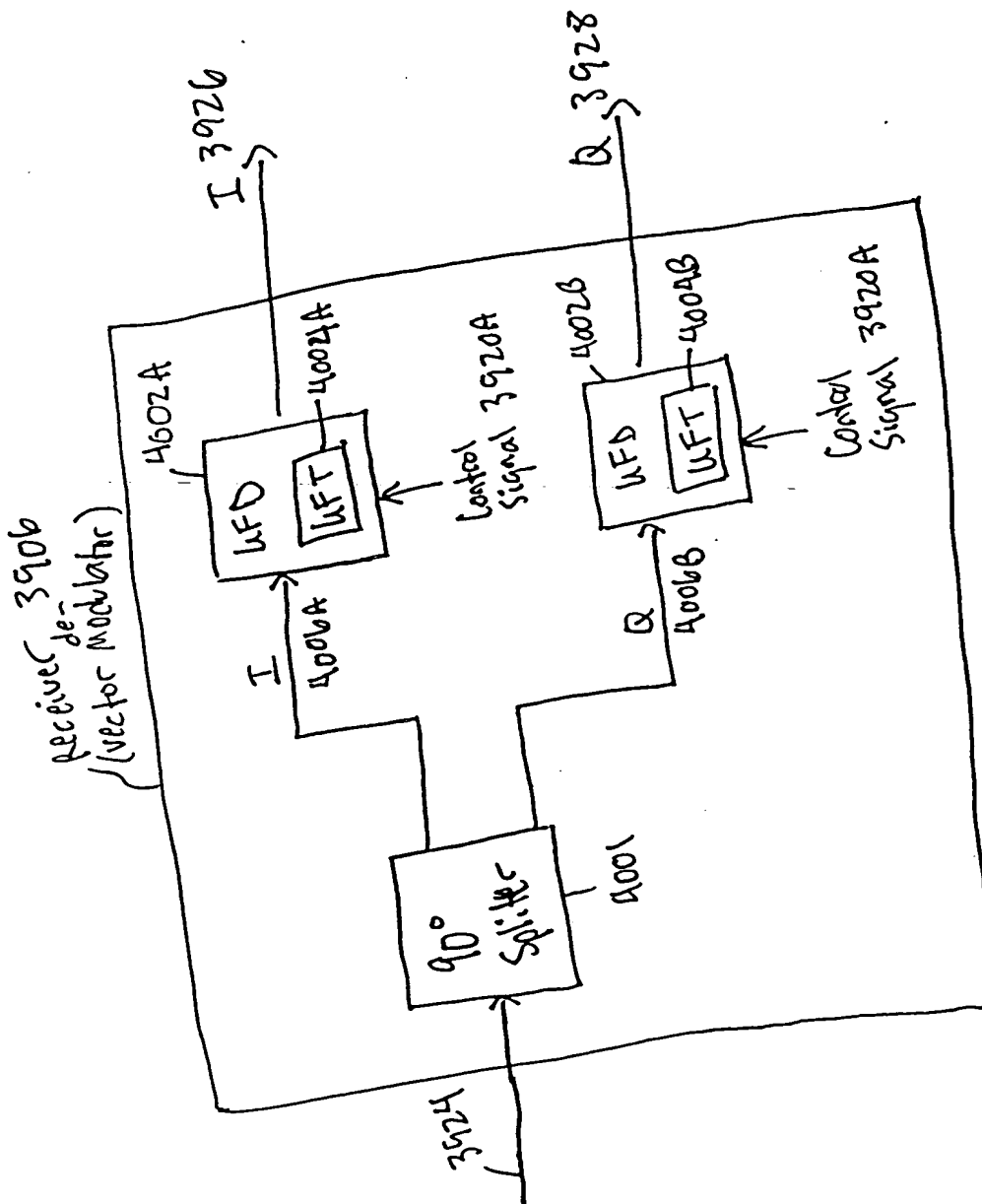


FIG. 40

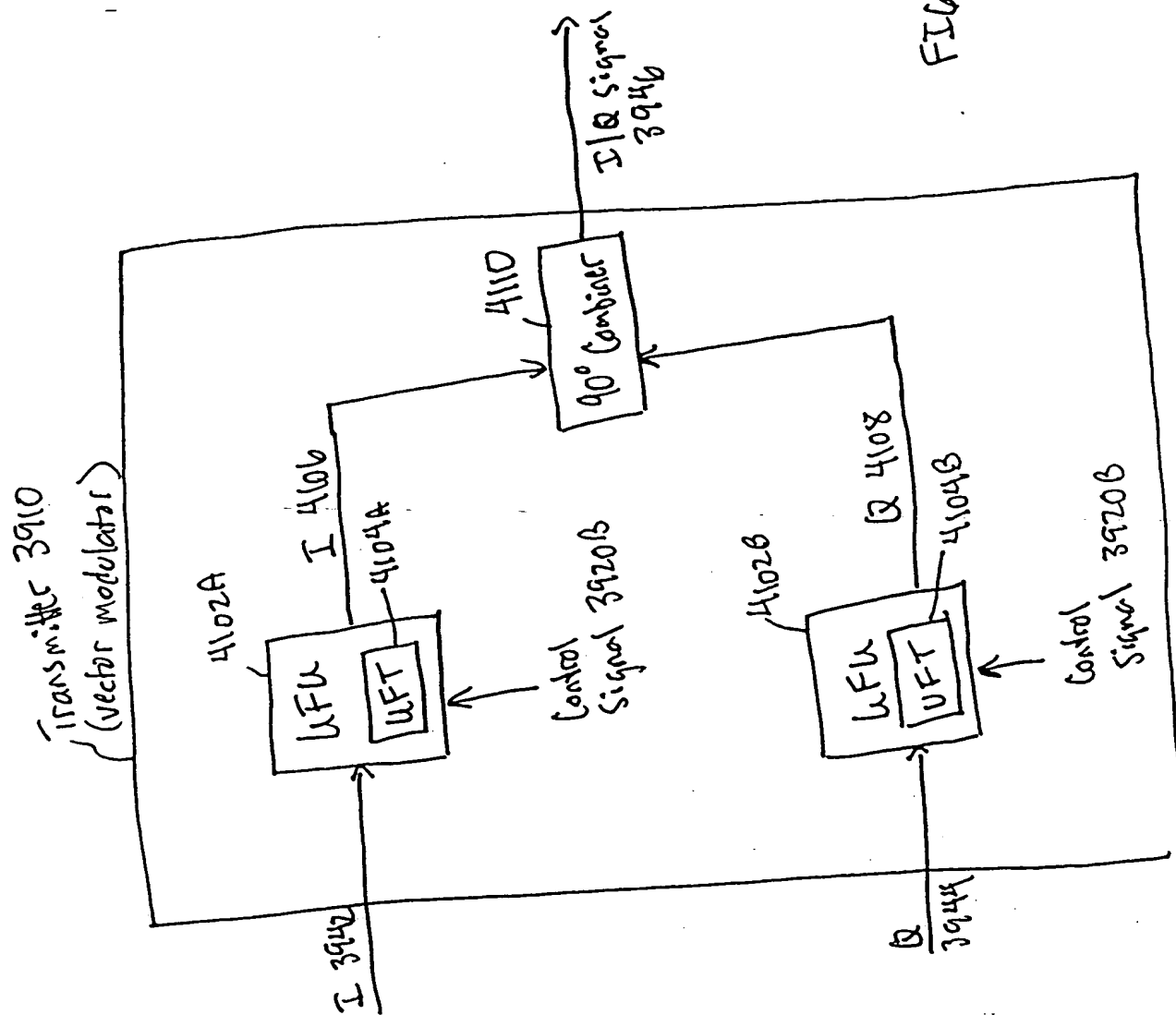
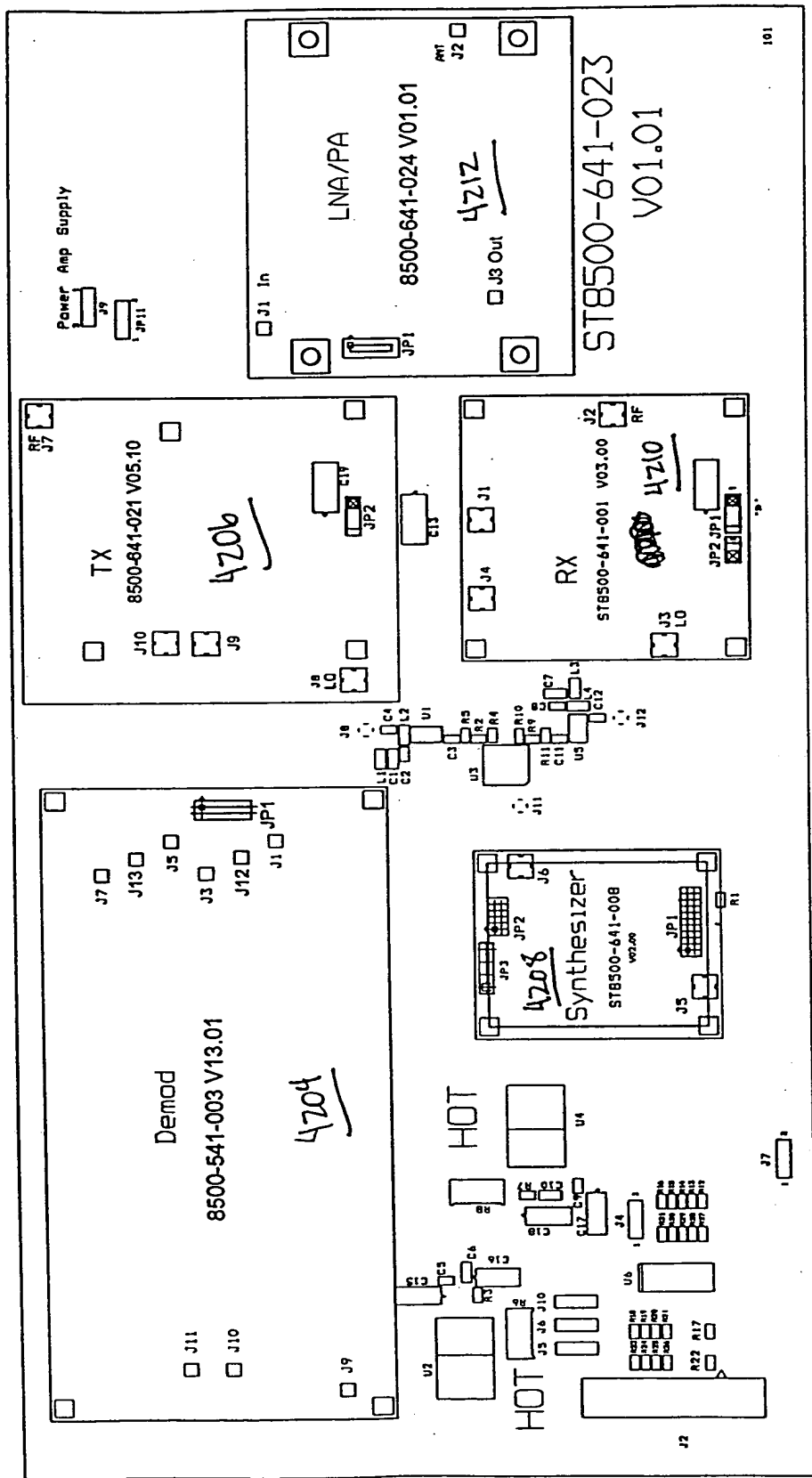


FIG. 41

4202

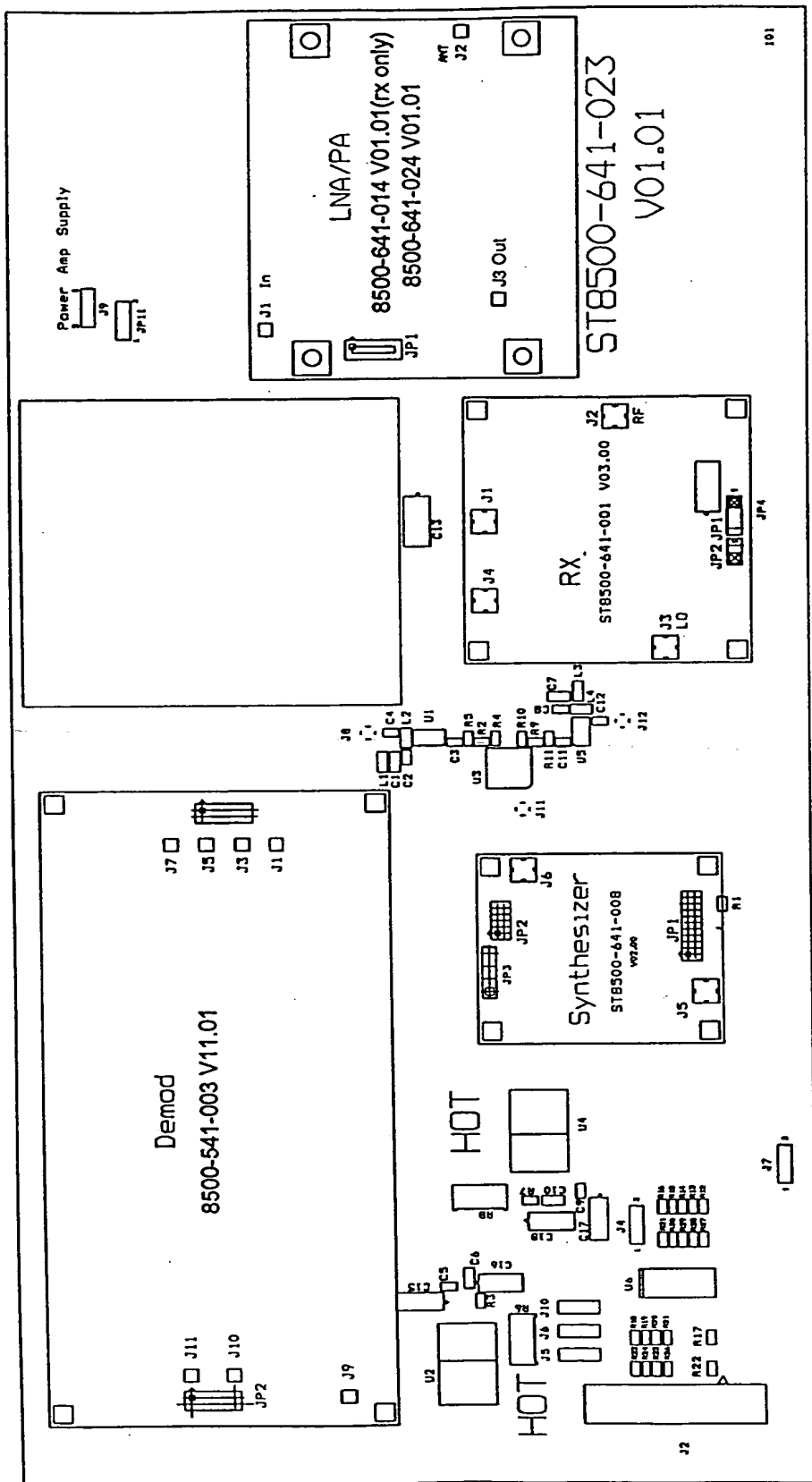


T/R

FIG. 42



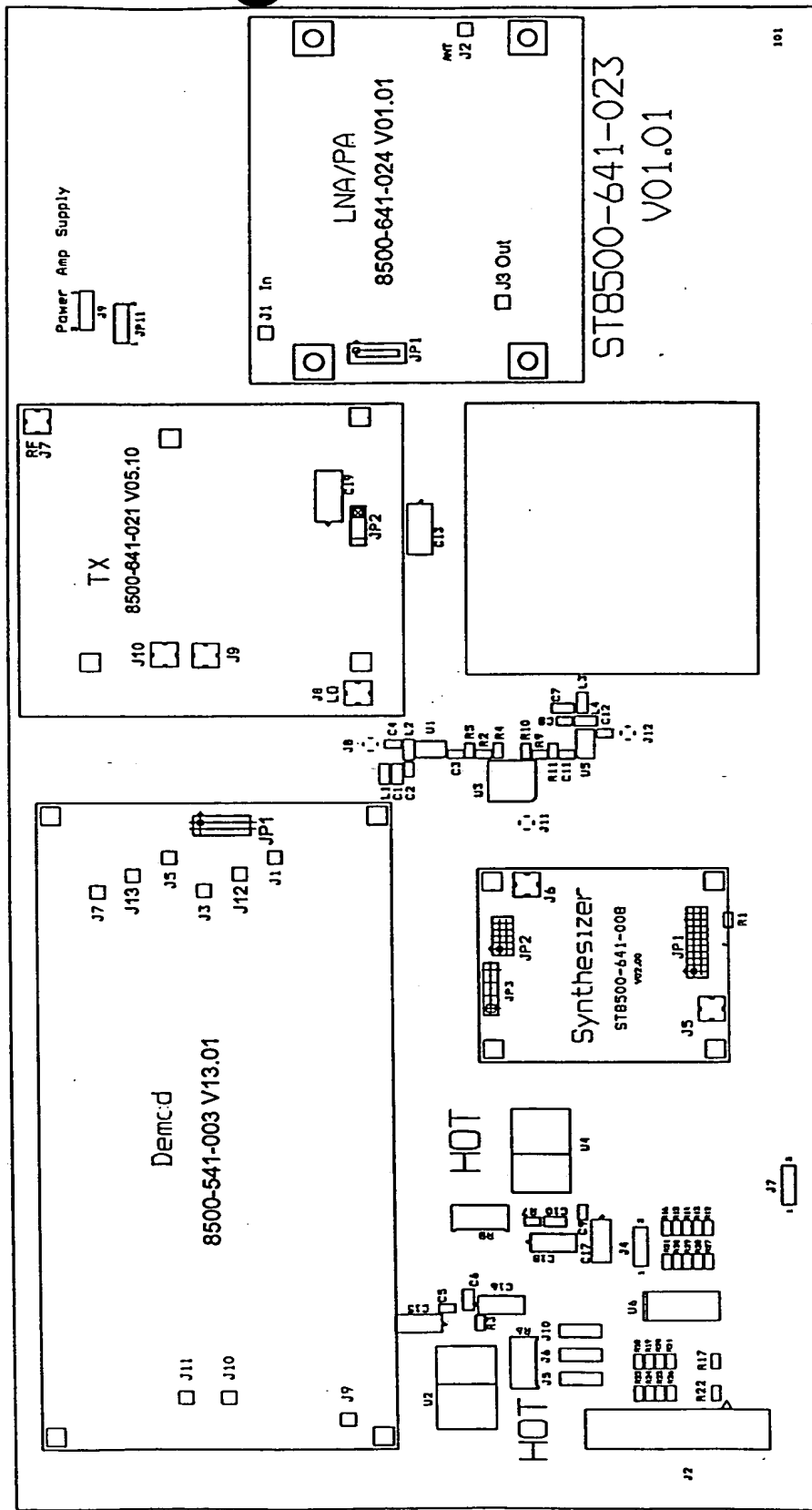
4302



Receive Only

FIG. 43

4402



Transmit Only

FIG. 44

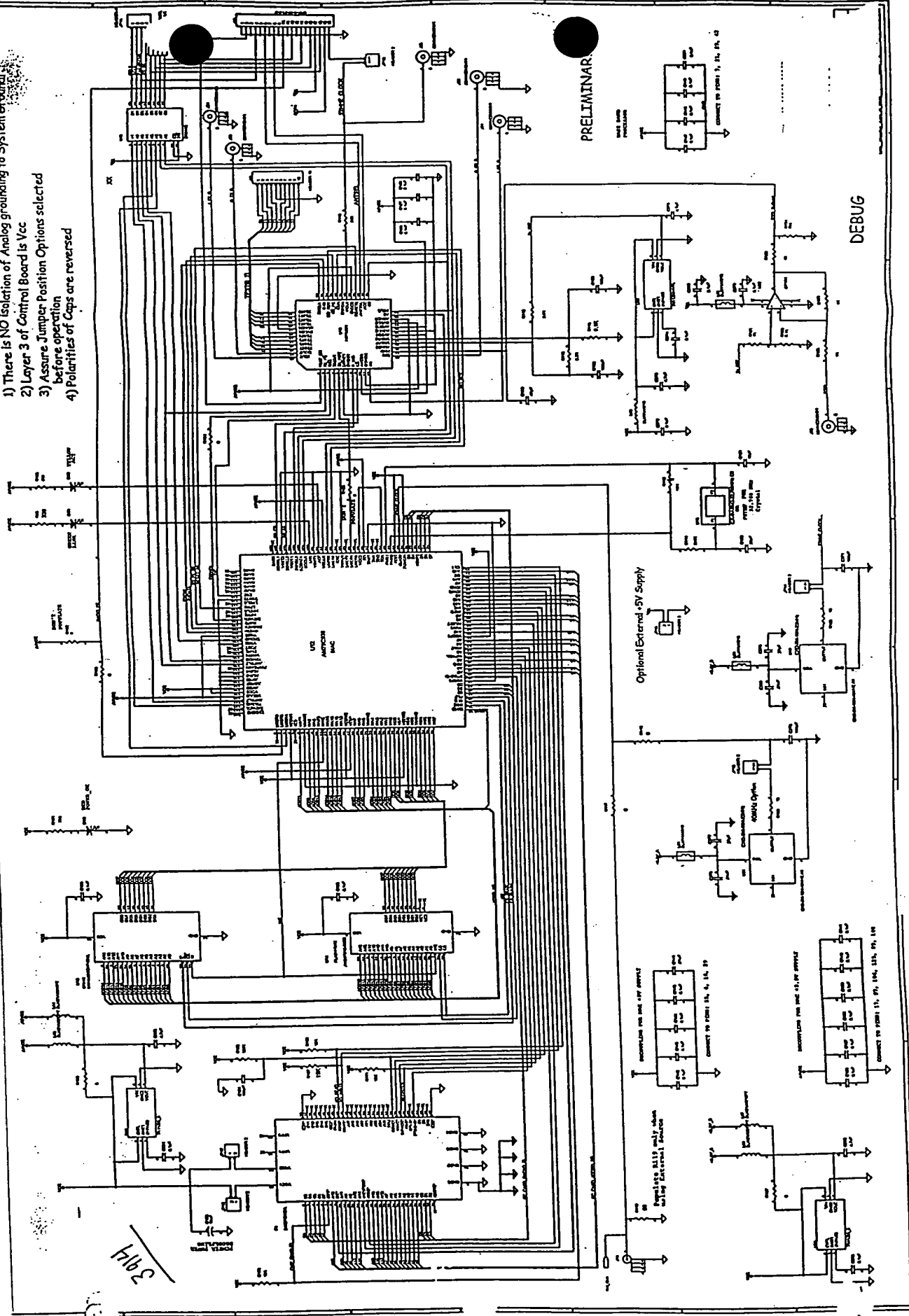
FIG. 45

1) There is NO Isolation of Analog grounding to System Ground

2) Layer 3 of Control Board is Vcc

3) Assume Jumper Position Options selected before operation

4) Polarities of Caps are reversed



1102

# VISION PCMCIA CONTROLLER BOM

PARK	Item	Quantity	Reference	Part Description	Part Number	Manufacturer
1	1	1	C123	10uF CAP 6032, Tantalum,20%	TAJT106K010R	Kemet
2	2	3	C263, C273, C275, C282	4.7uF CAP 6032, Tantalum,20%	T491A475M006AS	Kemet
3	3	25	C120, C125, C126, C127, C128, C136, C137, C138, C139, C140, C141, C142, C143, C144, C145, C147, C148, C149, C264, C272, C274, C279, C280, C281, C283	6032, Tantalum,20%	GRM39X7R104K050AD	Murata
4	4	3	C146, C269, C276	.01uF CAP 0603,X7R,10%	GRM39X7R103K050AD	Murata
5	5	5	C124, C132, C133, C271, C278	100pF CAP 0603,X7R,10%	GRM39COG101K050AD	Murata
6	6	1	C129	47pF CAP 0603,X7R,10%	GRM39COG470J100AD	Murata
7	7	2	C270, C277	27pF CAP 0603,X7R,10%	GRM39COG270K050AD	Murata
8	8	1	C130	22pF CAP 0603,X7R,10%	GRM39COG220K050AD	Murata
9	9	1	C131	10pF CAP 0603,X7R,10%	GRM39COG100D050AD	Murata
10	10	1	DS1	LED, Green	597-3311-420	Dialight
11	11	1	DS2	LED Yellow	597-3401-420	Dialight
12	12	1	DS3	LED Red	597-3111-420	Dialight
13	13	6	JP12, JP13, JP14, JP15, JP16, JP17	Connector HEADER 2Pin	2MS-19-33-01	Specialty Electronics
14	14	1	JP11	Connector HEADER 4Pin	100VH/TMSQW.100/4	BLKCON
15	15	7	J16, J20, J21, J22, J23, J24, J25	Connector 82MMCX	82MMCX-50-0-1	Huber/Shuner
16	16	1	J18	Connector Header10	TMS-110-01-G-S	samtec
17	17	1	J19	Connector with Ejector	EHT-1-10-01-S-D	samtec
18	18	1	P1	Connector 34X2PCMCIA	DICMJ-68S-SPC-M08	ITT Canon
19	19	7	L59, L60, L61, L63, L64, L65, L66	Ferrite Bead	BLM11A121S	Murata
20	20	1	R112	10M, Resistor, 0603, 5%	ERJ-3GSYJ394V	Panasonic
21	21	1	R114	390K, Resistor, 0603, 5%	ERJ-3GSYJ104V	Panasonic
22	22	1	R105	100K, Resistor, 0603, 5%	ERJ-3GSYJ153V	Panasonic
23	23	4	R108, R107, R108, R111	15K, Resistor, 0603, 5%	ERJ-3GSYJ912V	Panasonic
24	24	1	R116	9.1K, Resistor, 0603, 5%	ERJ-3GSYJ822V	Panasonic
25	25	1	R115	8.2K, Resistor, 0603, 5%	ERJ-3GSYJ392V	Panasonic
26	26	1	R113	3.9K, Resistor, 0603, 5%	ERJ-3GSYJ751V	Panasonic
27	27	1	R101	750, Resistor, 0603, 5%	ERJ-3GSYJ561V	Panasonic
28	28	1	R110	560, Resistor, 0603, 5%	ERJ-3GSYJ331V	Panasonic
29	29	1	R99, R100	330, Resistor, 0603, 5%	ERJ-3GSYJ331V	Panasonic
30	30	2				

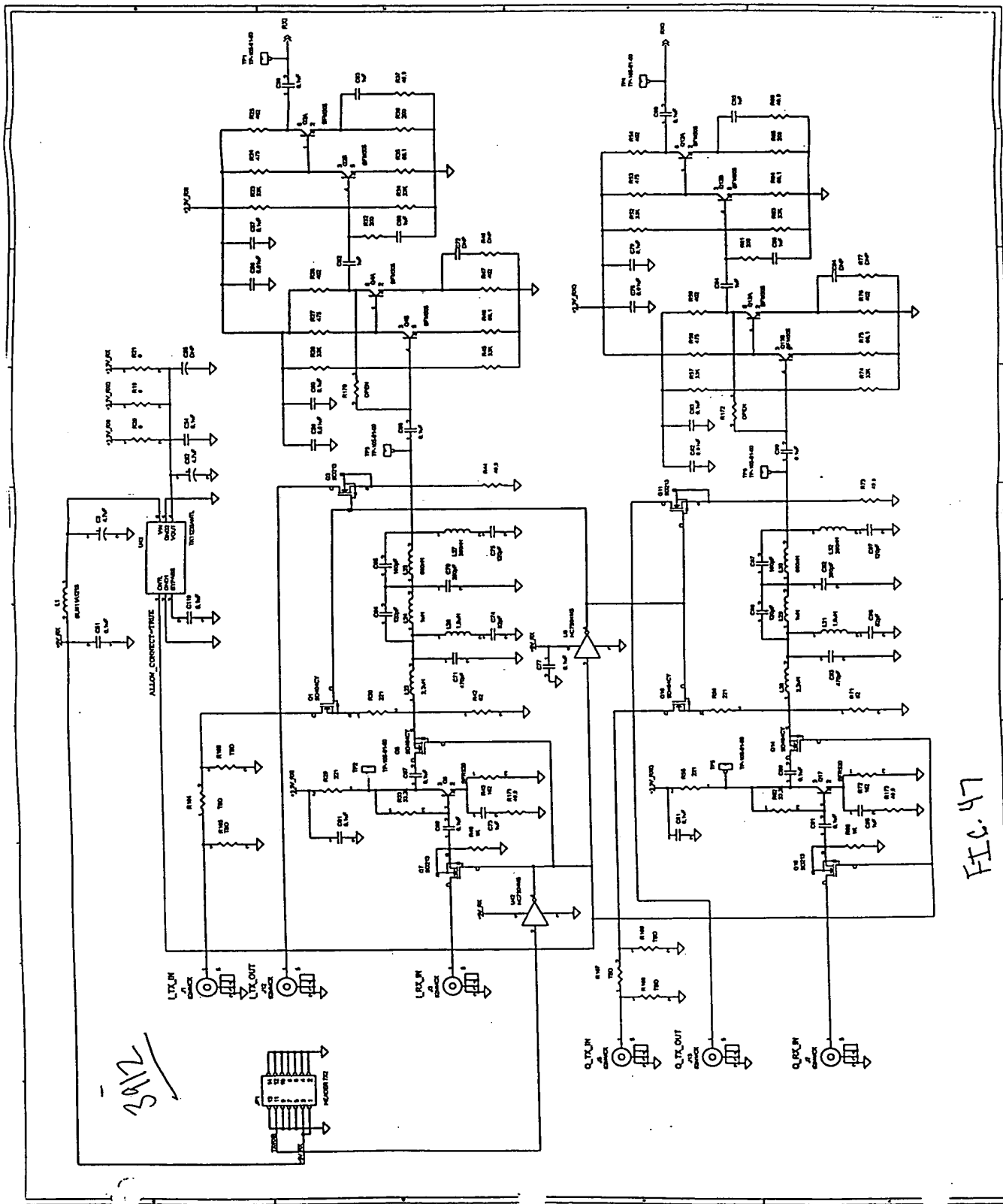
FIG. 46A

001000 5566360

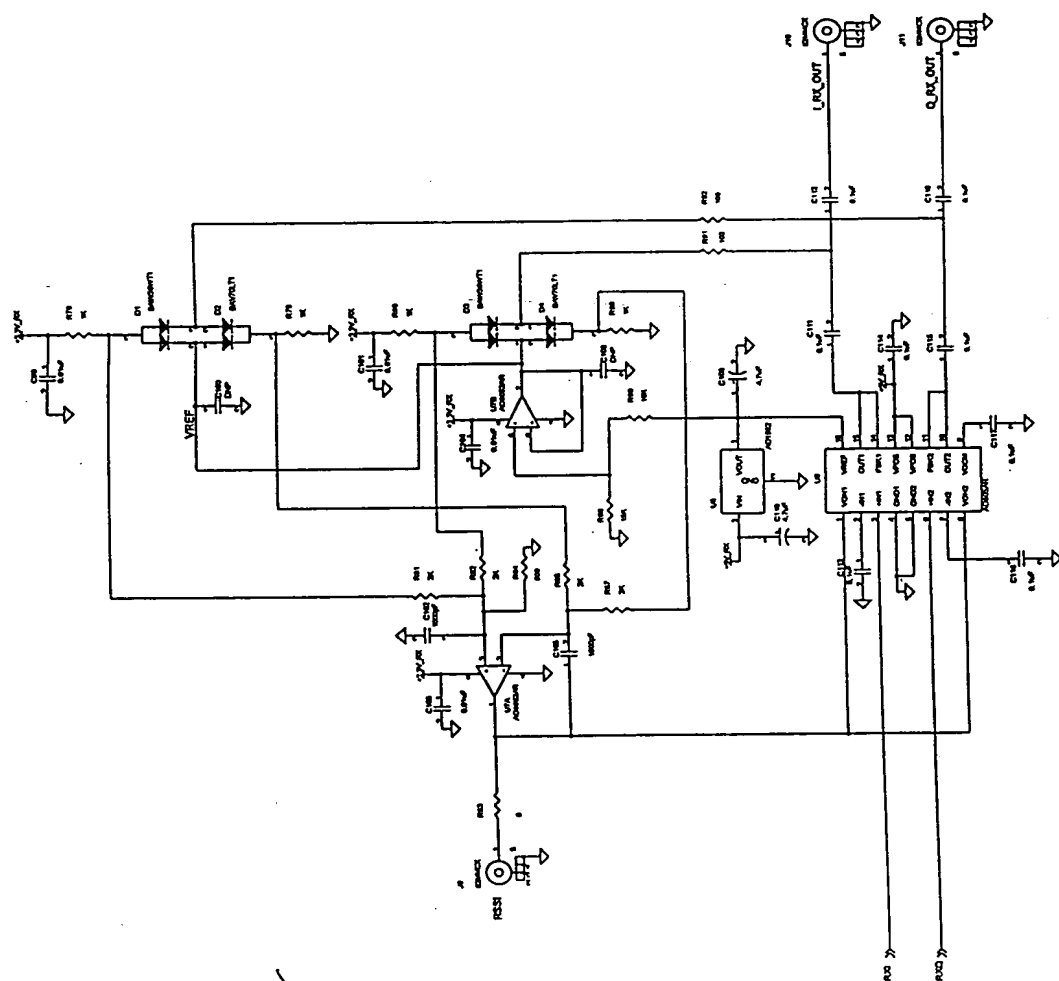
31	1	R119	50, Resistor, 0603, f	ERJ-3GSYJ500V	Panasonic
32	2	R128, R129	10, Resistor, 0603, b...	ERJ-3GSYJ100V	Panasonic
33	8	R102, R103, R104, R109, R117, R118, R120, R127	0, Resistor, 0603, 5%	RM732Z1J000ZT	ERJ-KOA
34	6	R121, R122, R123, R124, R125, R126	TBD, Resistor, 0603, 5%	3GSYJ000V	Panasonic
35	1	U10	SRAM	KM62256DLTG-5L	Samsung
36	1	U12	MAC	M5M5256CVP-55LL	Mitsubushi
37	1	U13	Baseband Processor	AM79C930	AMD
38	1	U14	FLASH RAM	HFA3842 A1	Harris
39	1	U15	32 KHz Crystal	AM29F010-55EC	AMD
40	2	U45	Bus Buffer	CX-6V-SM2-32.768KHz C/I	Statek
41	1	U48	Regulator 3.5 V	DS3862	National
42	1	U49	22MHz Oscillator	TK11235BMC	TOKO
43	1	U50	2 Volt Reference	FOX F3346-22MHz	FOX
44	1	U51	40MHz Oscillator	TK11220BMC	TOKO
				CXO-M-10N-40MHz A/I	Statek

FIG. 46B

00000 9922300



000000 9922300



3912

FIG. 48

Item	Quantity	Reference	Part	Part Number	Manufacturer
1	4	C3,C52,C108,C110	4.7uF	T491A475K006AS	KEMET
2	26	C51,C54,C57,C58,C60,C61, C67,C68,C69,C77,C79,C80, C81,C83,C89,C90,C91,C111, C112,C113,C114,C115,C116, C117,C118,C119	0.1uF	GRM39Y5V104Z016	Murata
3	1	C55	DNP	T491A475K006AS	KEMET
4	8	C56,C59,C78,C82,C99,C101, C103,C104	0.01uF	GRM39X7R103K050	Murata
5	8	C62,C63,C66,C73,C84,C85, C88,C95	1uF	GRM40Y5V105Z016	Murata
6	4	C64,C75,C86,C97	120pF	GRM39COG121J050	Murata
7	2	C65,C87	180pF	GRM39COG181J050	Murata
8	2	C70,C92	390pF	GRM39COG391J050	Murata
9	2	C71,C93	470pF	GRM39COG471J050	Murata
10	2	C72,C94	DNP	GRM40Y5V105Z016	Murata
11	2	C74,C96	82pF	GRM39COG820J050	Murata
12	2	C100,C106	DNP	DNP	Murata
13	2	C105,C102	1000pF	GRM39COG102K050	Murata
14	2	D3,D1	BAW56WT1	BAW56WT1	Motorola
15	2	D4,D2	BAV70LT1	BAV70LT1	Motorola
16	1	JP1	HEADER 7X2	FTSH-107-02-L-D	Samtec
17	9	J1,J3,J5,J7,J9,J10,J11, J12,J13	82MMCX	82MMCX-50-0-1	Suhner
18	1	L1	BLM11A121S	BLM11A121S	Murata
19	2	L23,L28	2.2uH	LQG21N2R2K10	Murata
20	2	L29,L24	1uH	LQG21N1R0K10	Murata
21	2	L30,L25	680nH	LQG21NR68K10	Murata
22	2	L26,L31	1.8uH	LQG21N1R8K10	Murata
23	2	L32,L27	390nH	LQG21NR39K10	Murata
24	4	Q1,Q5,Q10,Q14	SD404CY	SD404CY	Calogic
25	4	Q2,Q4,Q12,Q13	BFM505	BFM505	Philips
26	4	Q3,Q7,Q11,Q16	SD213	SD213	Calogic
27	2	Q17,Q8	BFR520	BFR520	Philips
28	4	R19,R20,R21,R83	0	ERJ3GSY0R00	Panasonic
29	8	R23,R26,R34,R45,R52,R57, R63,R74	33K	ERJ3GSYJ333	Panasonic
30	4	R24,R27,R53,R58	475	ERJ3EKF4750	Panasonic
31	6	R25,R28,R47,R54,R59,R76	402	ERJ3EKF4020	Panasonic
32	4	R29,R30,R55,R56	221	ERJ3EKF2210	Panasonic
33	2	R32,R61	200	ERJ3GSYJ201	Panasonic
34	2	R33,R62	33.2K	ERJ3GSYJ333	Panasonic
	4	R35,R46,R64,R75	68.1	ERJ3EKF68R1	Panasonic

FIG. 49A



36	2	R36,R65	200	ERJ3EKF2000	Panasonic
7	6	R37,R44,R66,R73,R171, R173	49.9	ERJ3EKF49R9	Panasonic
38	6	R40,R68,R78,R79,R80,R89	1K	ERJ3EKF1001	Panasonic
39	2	R42,R71	62	ERJ3GSYJ620	Panasonic
40	2	R43,R72	162	ERJ3EKF1620	Panasonic
41	2	R77,R48	DNP	ERJ3GSYJ330	Panasonic
42	4	R81,R82,R85,R87	2K	ERJ3EKF2001	Panasonic
43	1	R84	909	ERJ3EKF9090	Panasonic
44	1	R88	15K	ERJ3EKF1502	Panasonic
45	1	R90	10K	ERJ3EKF1002	Panasonic
46	2	R91,R92	100	ERJ3EKF1000	Panasonic
47	6	R164,R165,R166,R167,R168, R169	TBD		Panasonic
48	2	R170,R172	OPEN		Panasonic
49	6	TP1,TP2,TP3,TP4,TP5,TP6	TP-105-01-00		
50	2	U42,U6	NC7S04M5	NC7S04M5	National Semiconductor
51	1	U7	AD8052AR	AD8052AR	Analog Devices
52	1	U8	AD1582	AD1582	Analog Devices
53	1	U9	AD605AR	AD605AR	Analog Devices
54	1	U43	TK11235AMTL	TK11235BM	Toko

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FIG. 49B

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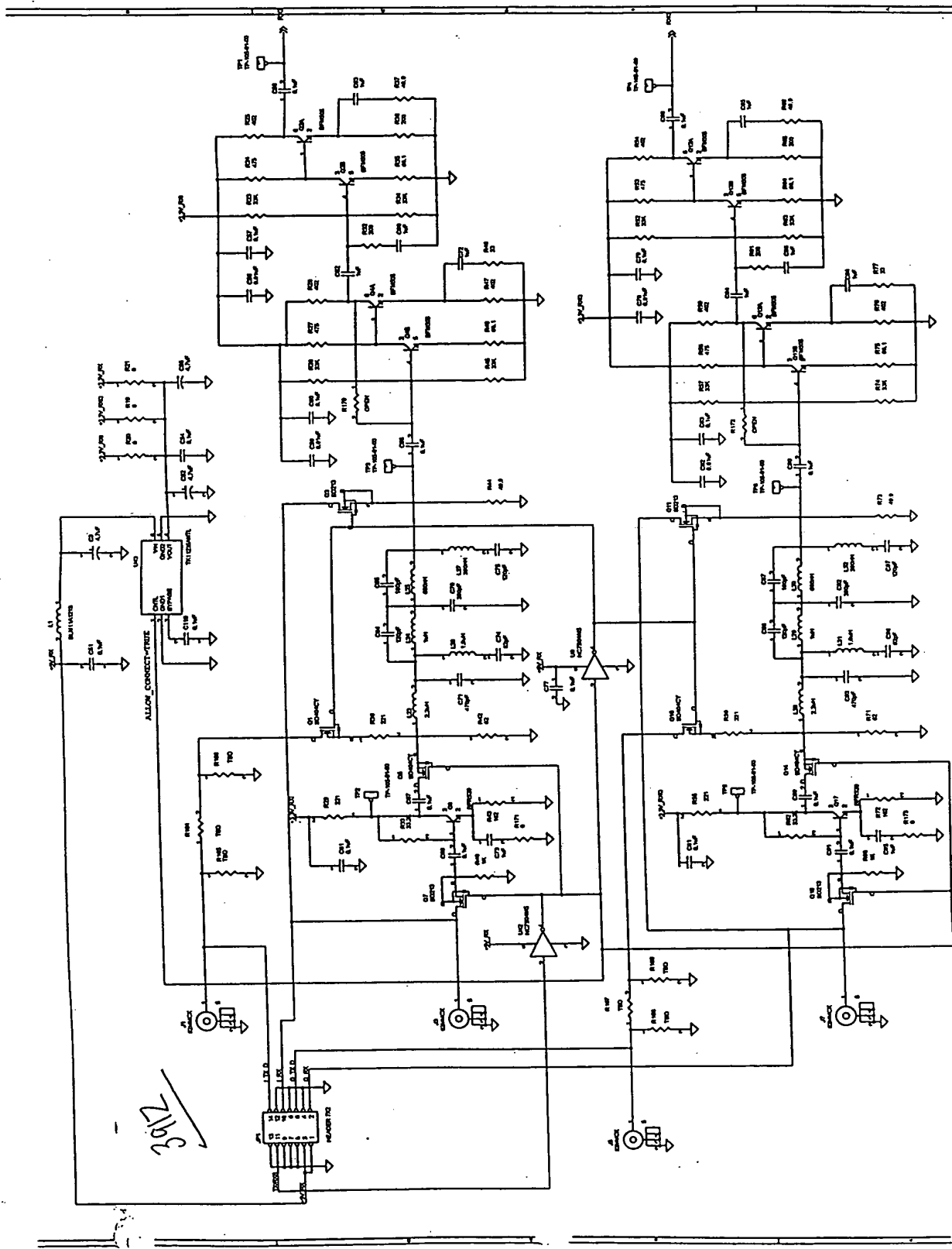


FIG. 50

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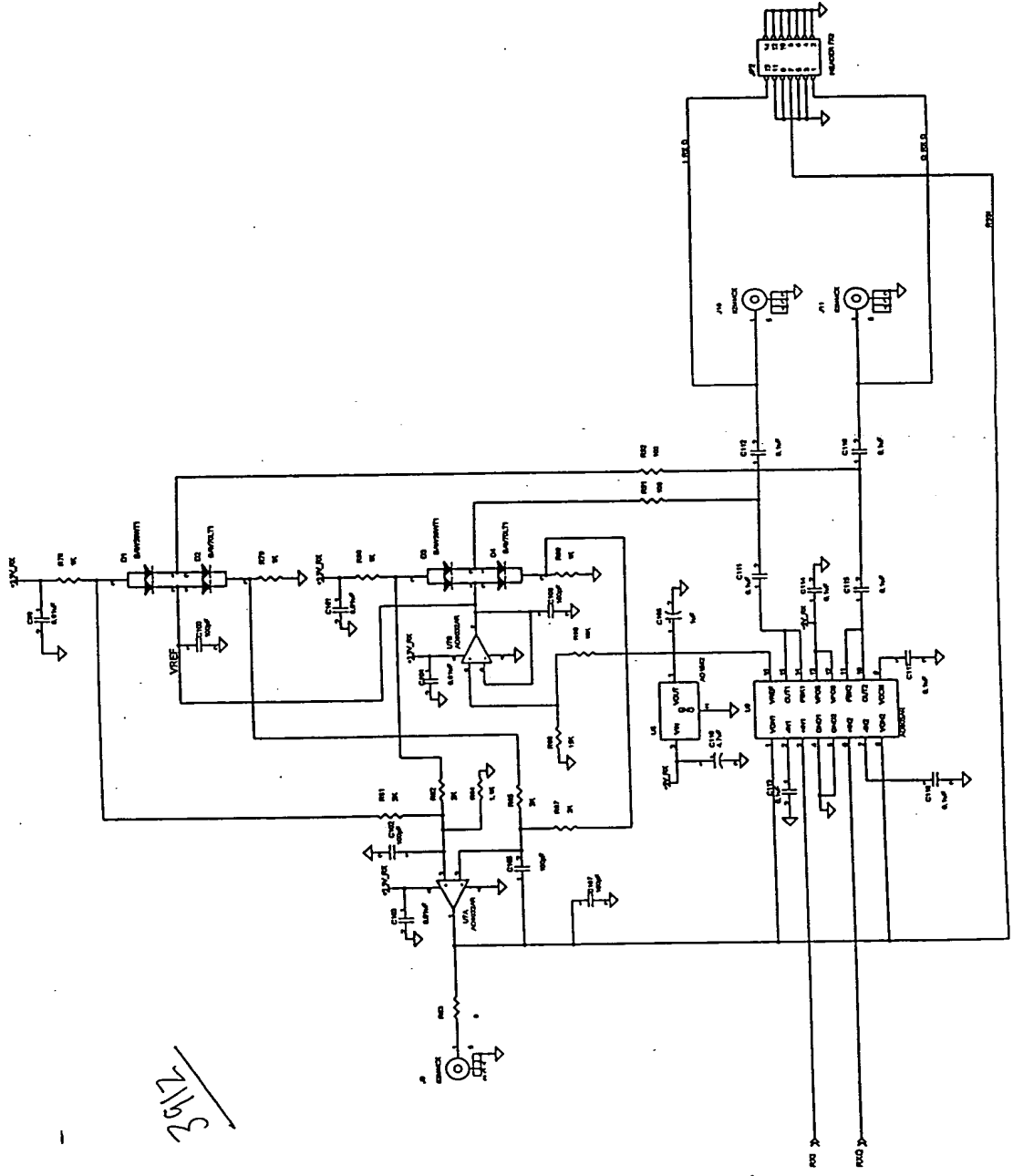


FIG. 51

# Bill Of Materials

Item	Quantity	Reference	Part	Part Number	Manufacturer
1	3	C3,C52,C55	4.7uF	T491A475K006AS	KEMET
2	26	C51,C54,C57,C58,C60,C61, C67,C68,C69,C77,C79,C80, C81,C83,C89,C90,C91,C111, C112,C113,C114,C115,C116, C117,C118,C119	0.1uF	GRM39Y5V104Z016	Murata
3	8	C56,C59,C78,C82,C99,C101, C103,C104	0.01uF	GRM39X7R103K050	Murata
4	10	C62,C63,C66,C72,C73,C84, C85,C88,C94,C95	1uF	GRM40Y5V105Z016	Murata
5	4	C64,C75,C86,C97	120pF	GRM39COG121J050	Murata
6	2	C87,C65	180pF	GRM39COG181J050	Murata
7	2	C70,C92	390pF	GRM39COG391J050	Murata
8	2	C71,C93	470pF	GRM39COG471J050	Murata
9	2	C96,C74	82pF	GRM39COG820J050	Murata
10	5	C100,C102,C105,C106,C107	100pF	GRM39COG101K050	Murata
11	1	C108	1uF		
12	1	C110	4.7uF		
13	2	D3,D1	BAW56WT1	BAW56WT1	Motorola
14	2	D4,D2	BAV70LT1	BAV70LT1	Motorola
15	2	JP2,JP1	HEADER 7X2		
16	6	J1,J3,J5,J7,J10,J11	82MMCX	142-0701-231	Johnson
17	1	J9	82MMCX	82MMCX-50-0-1	Suhner
18	1	L1	BLM11A121S	BLM11A121S	Murata
19	2	L28,L23	2.2uH	LQG21N2R2K10	Murata
20	2	L24,L29	1uH	LQG21N1R0K10	Murata
21	2	L30,L25	680nH	LQG21NR68K10	Murata
22	2	L26,L31	1.8uH	LQG21N1R8K10	Murata
23	2	L27,L32	390nH	LQG21NR39K10	Murata
24	4	Q1,Q5,Q10,Q14	SD404CY	SD404CY	Calogic
25	4	Q2,Q4,Q12,Q13	BFM505	BFM505	Philips
26	4	Q3,Q7,Q11,Q16	SD213	SD213	Calogic
27	2	Q17,Q8	BFR520	BFR505	Philips
28	5	R19,R20,R21,R171,R173	0		
29	8	R23,R26,R34,R45,R52,R57, R63,R74	33K	ERJ3GSYJ333	Panasonic
30	4	R24,R27,R53,R58	475	ERJ3EKF4750	Panasonic
31	6	R25,R28,R47,R54,R59,R76	402	ERJ3EKF4020	Panasonic
32	4	R29,R30,R55,R56	221	ERJ3EKF2210	Panasonic
33	2	R32,R61	200	ERJ3GSYJ201	Panasonic
34	2	R33,R62	33.2K	ERJ3GSYJ333	Panasonic
	4	R35,R46,R64,R75	68.1	ERJ3EKF68R1	Panasonic
	2	R36,R65	200	ERJ3EKF2000	Panasonic

FIG. 52A

37	2	R66,R37	49.9	ERJ3EKF49R9	Panasonic
8	6	R40,R68,R78,R79,R80,R89	1K	ERJ3EKF1001	Panasonic
39	2	R42,R71	62	ERJ3GSYJ620	Panasonic
40	2	R43,R72	162	ERJ3EKF6810	Panasonic
41	2	R44,R73	49.9	ERJ3EKF1001	Panasonic
42	2	R77,R48	33	ERJ3GSYJ330	Panasonic
43	4	R81,R82,R85,R87	2K	ERJ3EKF2001	Panasonic
44	1	R83	0	ERJGSY0R00	Panasonic
45	1	R84	1.1K	ERJ3EKF2001	Panasonic
46	1	R88	15K	ERJ3EKF1502	Panasonic
47	1	R90	10K	ERJ3EKF1002	Panasonic
48	2	R91,R92	100	ERJ3EKF1000	Panasonic
49	6	R164,R165,R166,R167,R168,	TBD		
		R169			
50	2	R170,R172	OPEN		
51	6	TP1,TP2,TP3,TP4,TP5,TP6	TP-105-01-00		
52	2	U42,U6	NC7S04M5		National Semiconductor
53	1	U7	AD8032AR	AD8032AR	Analog Devices
54	1	U8	AD1582	AD1582	Analog Devices
55	1	U9	AD605AR	AD605AR	Analog Devices
56	1	U43	TK11235AMTL	TK11235AMTL	Toko

FIG. 52B

001000 55022900

3912

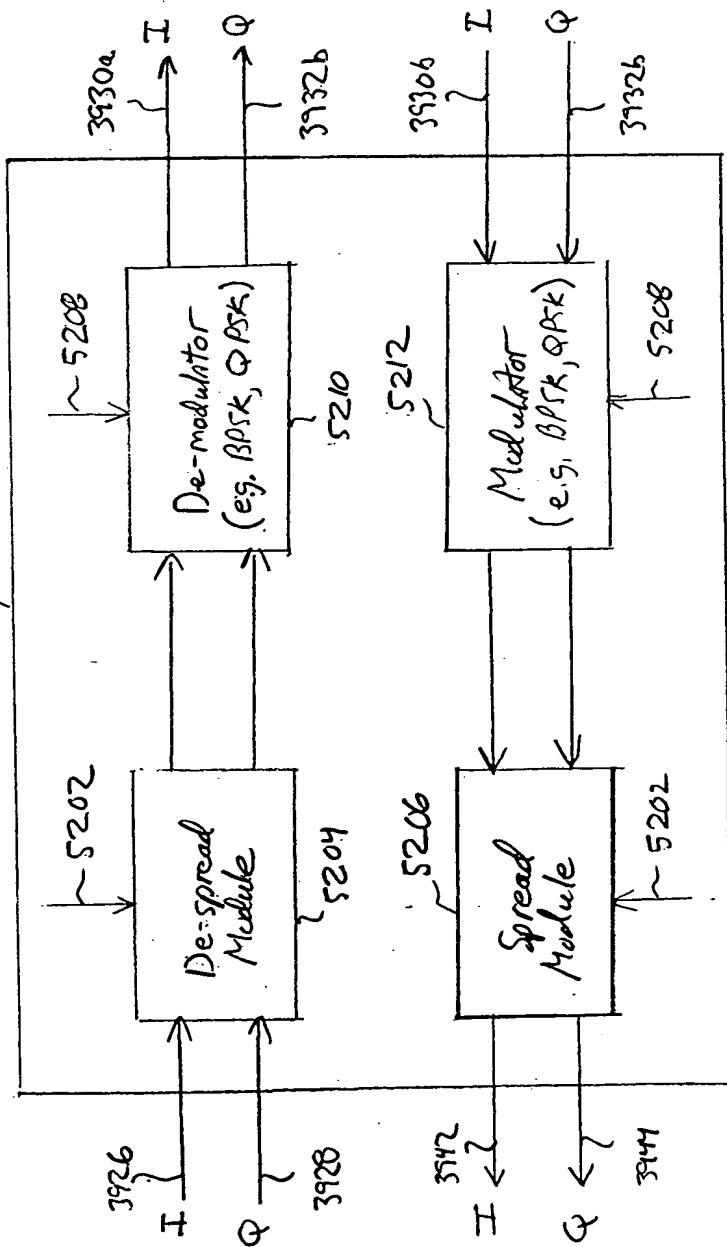
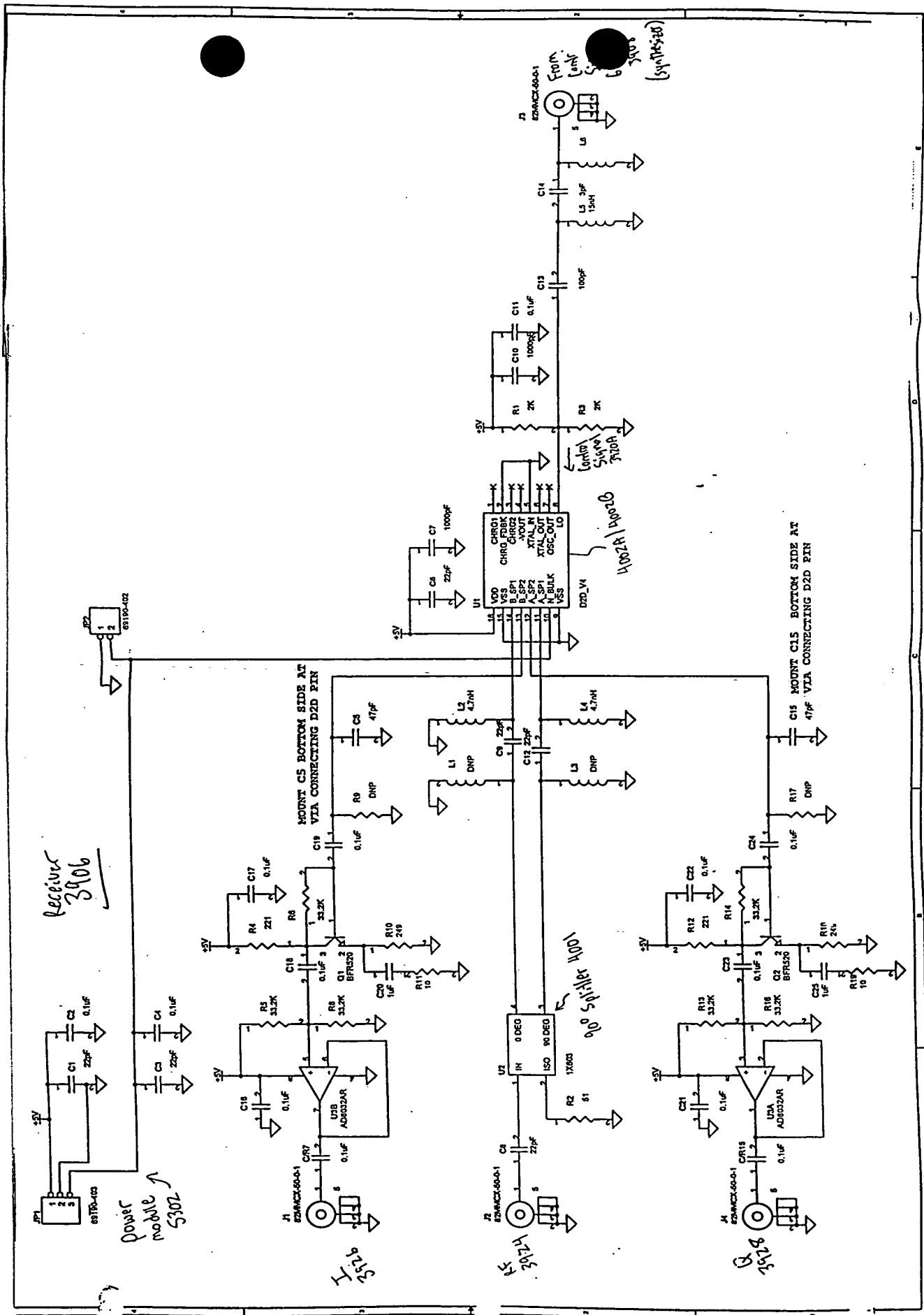


Fig. 520C

Fig. 53



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3908

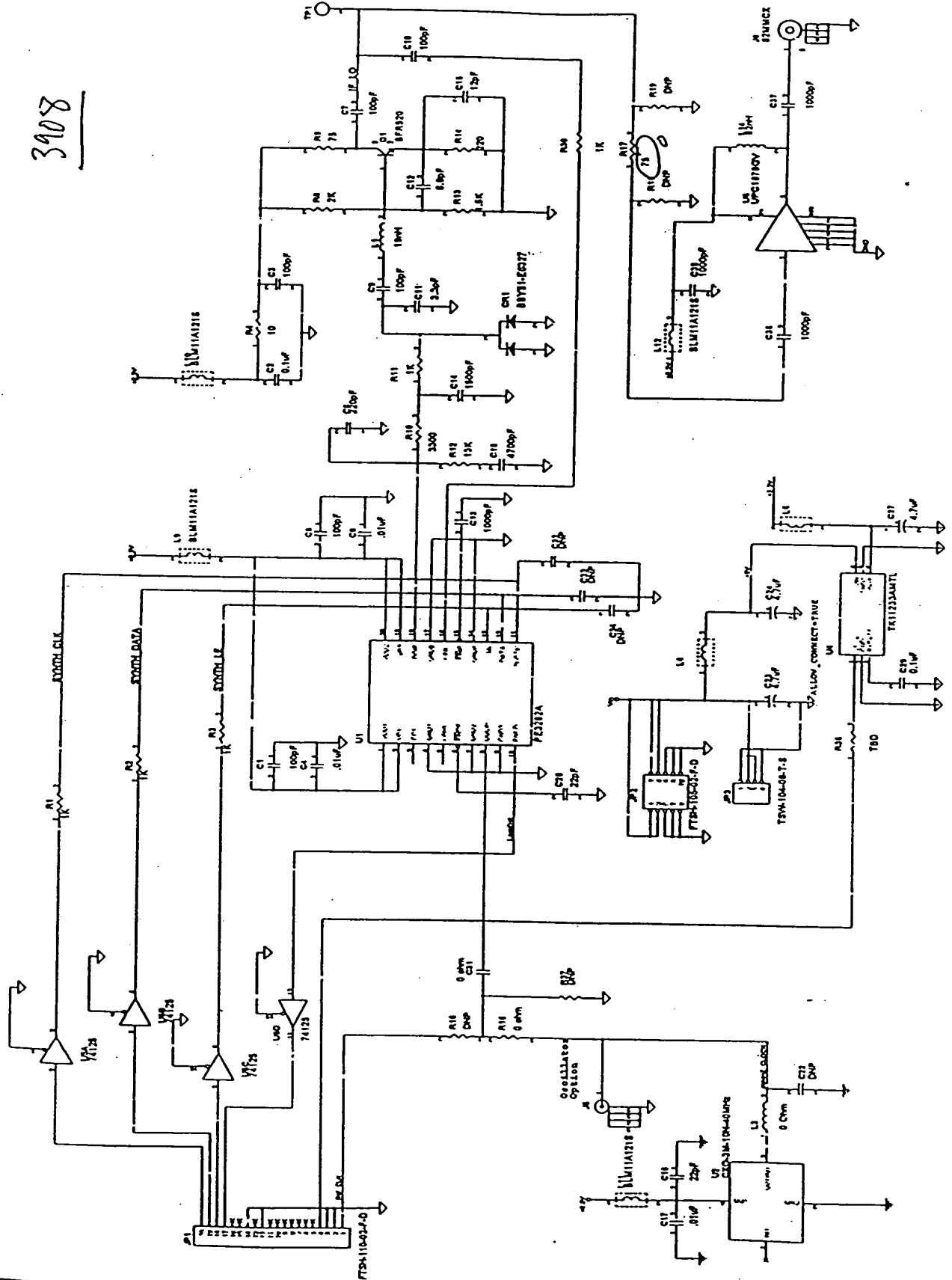


FIG-55

Item	Qty	Reference	Part	Description	Part Number	Manufacturer
1	1	CR1	BBY51-E6327	Diode, Varactor	BBY51-E6327	Siemens
2	6	C1,C3,C5,C7,C9,C10	100pF	Capacitor, ceramic, 100pF, 10%, COG, 0603	GRM39COG101K050	Murata
3	2	C29,C2	0.1uF	Capacitor, ceramic, .1uF, 10%, X7R, 0603	GRM39X7R104K016AD	Murata
4	3	C4,C8,C17	.01uF	Capacitor, ceramic, .01uF, 10%, X7R, 0603	GRM39X7R103K050	Murata
5	1	C6	220pF	Capacitor, ceramic, 220pF, 5%, COG, 0603	GRM39COG221J025	Murata
6	1	C11	3.3pF	Capacitor, ceramic, 3.3pF, 5%, COG, 0603	GRM39COG3R3B100V	Murata
7	1	C12	6.8pF	Capacitor, ceramic, 6.8pF, +/-25pF, COG, 0603	GRM39COG6R8C100V	Murata
8	4	C13,C35,C36,C37	1000pF	Capacitor, ceramic, 1000pF, 10%, X7R, 0603	GRM39X7R102K016	Murata
9	1	C14	1500pF	Capacitor, ceramic, 1500pF, 10%, X7R, 0603	GRM39X7R152K016	Murata
10	1	C15	12pF	Capacitor, ceramic, 12pF, 5%, COG, 0603	GRM39COG12PJ050	Murata
11	1	C16	4700pF	Capacitor, ceramic, 4700pF, 10%, 0603	GRM39X7R472K016	Murata
12	2	C20,C18	22pF	Capacitor, ceramic, 22pF, 10%, COG, 0603	GRM38COG220K050	Murata
13	4	C22,C32,C33,C34	DNP	Capacitor, ceramic, . . . , 0603		Murata
14	3	C23,C24,C27	4.7uF	Capacitor, tantalum, 4.7uF, 10%, 3216	T491A475K006AS	Kemet
15	2	R16,C31, R17	0 ohm	Resistor, zero ohm, 0603	ERJ3GSGY0R00	Panasonic
16	1	JP1	FTSH-110-02-F-D	Header, dual row 10x2, .050x.050	FTSH-110-02-F-D	Samtec
17	1	JP2	FTSH-105-02-F-D	Header, dual row 5x2, .050x.050	FTSH-105-02-F-D	Samtec
18	1	JP3	TSW-104-08-T-S	Header, single row 4 pin, .100"	TSW-104-08-T-S	Berg
19	2	J5,J6	82MMCX	RF Connector	82MMCX-50-0-1	Suhner
20	1	L1	18nH	Inductor, 18nH, 10%, 0805	0805CS-180XJBC	Coilcraft
21	1	L3	0 Ohm	Zero Ohm Jumper	RM73Z1JT	KOA
22	6	L4,L6,L9,L10,L11,L12	BLM11A121S	Ferrite Bead, 0603	BLM11A121S	Murata
23	1	L14	82nH	Inductor, 82nH, 10%, 0805	LL2012-F82NK	Toko
24	1	Q1	BFR520	Transistor, NPN	BFR520	Philips
25	5	R1,R2,R3,R11,R30	1K	Resistor, 1K, 5%, 0603	ERJ3GSGYJ102	Panasonic
26	1	R4	10	Resistor, 10 ohm, 5%, 0603	ERJ3GSGYJ1R0	Panasonic
27	1	R8	2K	Resistor, 2K, 5%, 0603	ERJ3GSGYJ202	Panasonic
28	2	R9,R17	75	Resistor, 75 ohm, 5%, 0603	ERJ3GSGYJ750	Panasonic
29	1	R10	3300	Resistor, 3.3K, 5%, 0603	ERJ3GSGYJ332	Panasonic
30	1	R12	13K	Resistor, 13K, 5%, 0603	ERJ3GSGYJ133	Panasonic
31	1	R13	1.5K	Resistor, 1.5K, 5%, 0603	ERJ3GSGYJ152	Panasonic

FIG. 56A

32	1	R14	220	Resistor, 220 ohm, 5%, 0603	ERJ3GSYJ221	Panasonic
33	1	R15	DNP	Resistor, zero ohm, 0603	ERJ3GSY0R00	Panasonic
34	2	R18,R19	DNP	Resistor, 91 ohm, 5%, 0603	ERJ3GSYJ910	Panasonic
35	1	R36	TBD	Resistor, zero ohm, 0603	ERJ3GSY0R00	Panasonic
36	1	R37	DNP	Resistor, . . 0603		Panasonic
37	1	TP1	Test Point			
38	1	U1	PE3282A	IC, Synthesizer	PE3282A	Peregrine
39	1	U2	CXO-3M-10N-40MHz	Xtal Osc, 40MHz	CXO-3M-10N-40MHZ A/I	Statek
40	1	U4	TK11233AMTL	Voltage Regulator, 3.5V	TK11235BM	Toko
41	1	U5	74125	IC, BUFFER	MC74LCX125DT	Motorola
42	1	U6	UPC1678GV	IC, RF Amplifier	UPC1678GV	NEC

Bate1D

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Ver. 2.00

43 1

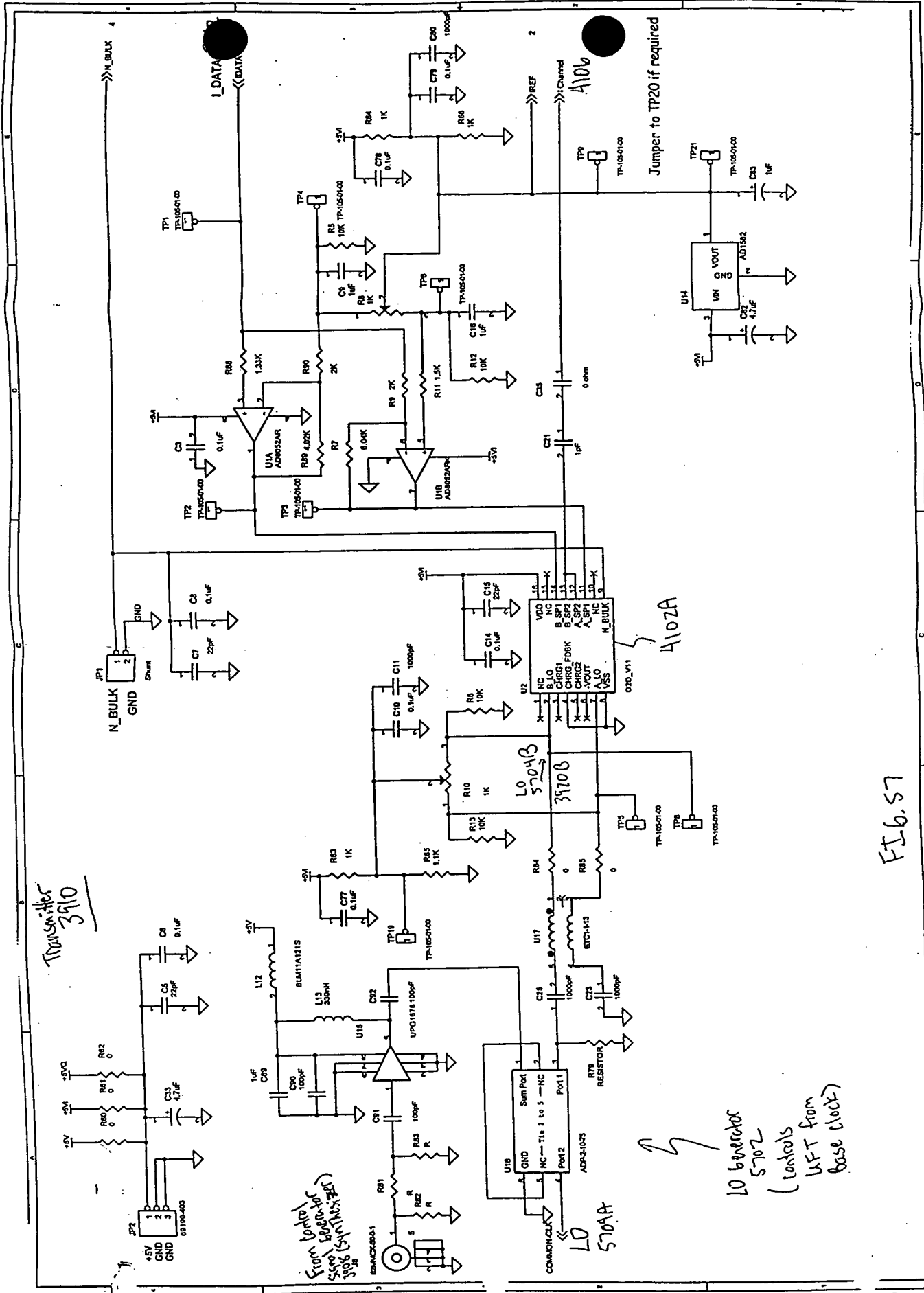
FIG. 56B

Transmitter  
3910

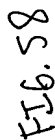
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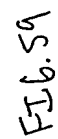
10 generator  
5702  
(controls  
LFT from  
base clock)

FTb.57



Data Conditioning  
Interf. 5802  
(Buffers)





4108

## Bill Of Materials

Item	Quantity	Reference	Part	Part Number	Manufacturer
1	21	C3,C6,C8,C10,C14,C38,C44, C46,C51,C71,C72,C77,C78, C79,C84,C85,C86,C93,C95, C96,C98	0.1uF	GRM39X7R104K016	Murata
2	6	C5,C7,C15,C43,C52,C75	22pF	GRM39COG220J050	Murata
3	5	C9,C16,C45,C53,C89	1uF	GRM40Y5V105Z016	Murata
4	8	C11,C23,C25,C47,C61,C63, C80,C87	1000pF	GRM39X7R102K050	Murata
5	2	C58,C21	1pF	GRM39COG010B50V	Murata
6	2	C82,C33	4.7uF	T491A475K006AS	KEMET
7	2	C59,C35	0 ohm	GRM39COGxxx50V	Murata
8	1	C73	470pF	GRM39COG471J050	Murata
9	1	C83	1uF	T491A105M016AS	Kemet
10	3	C90,C91,C92	100pF	ECU-V1H101JCV	
11	2	C94,C97	0.01uF	GRM39X7R103K016	Murata
12	1	FL1	MDR642E	MDR642E	Soshin
13	1	JP1	Shunt	69190-402	BERG
14	1	JP2	69190-403	69190-403	BERG
15	4	J7,J8,J9,J10	82MMCX-50-0-1	82MMCX-50-0-1	Suhner
16	1	L10	22nH	LL1608-F22NK	Coilcraft
17	1	L12	BLM11A121S	BLM11A121S	Murata
18	1	L13	330nH	LL2012-FR33K	
19	10	R5,R6,R12,R13,R32,R33, R39,R40,R95,R100	10K	ERJ3EKF1002	Panasonic
20	2	R34,R7	6.04K	ERJ3EKF6041	Panasonic
21	4	R8,R10,R35,R37	1K	3224W-1-102	Bourns
22	4	R9,R36,R90,R103	2K	ERJ3EKF2001	Panasonic
23	2	R38,R11	1.5K	ERJ3EKF1501	Panasonic
24	3	R56,R94,R99	0 ohm	ERJ3GSY0R00	Panasonic
25	1	R59	51	ERJ3GSYJ510	Panasonic
26	7	R60,R61,R62,R84,R85,R86, R87	0	ERJ3GSY0R00	Panasonic
27	6	R63,R64,R66,R69,R70,R72	1K	ERJ3EKF1001	Panasonic
28	2	R71,R65	1.1K	ERJ3EKF1101	Panasonic
29	2	R80,R79	RESISTOR		
30	3	R81,R82,R83	R		
31	4	R88,R91,R96,R101	1.33K	ERJ3EKF1331	Panasonic
32	2	R102,R89	4.02K	ERJ3EKF4021	Panasonic
33	2	R92,R97	499	ERJ3EKF4990	Panasonic
34	19	TP1,TP2,TP3,TP4,TP5,TP6,	TP-105-01-00		

FIG. b1A

000000 5562300



		TP8,TP9,TP11,TP12,TP13,			
		TP14,TP15,TP16,TP18,TP19,			
		TP20,TP21,TP22			
35	3	U1,U6,U19	AD8052AR	AD8052AR	Analog Devices
36	2	U7,U2	D2D_V11	D2D_V11	Parker Vision
37	1	U11	MAAM22010	MAAM22010	MACOM
38	1	U12	1X603	1X603	Anaren
39	1	U14	AD1582	AD1582	Analog Devices
40	1	U15	UPG1678	UPG1678GV	NEC
41	1	U16	ADP-2-10-75	ADP-2-10-75	Mini-Circuits

42 1

BOARD

B500.641.021 VDS.10

FIG. 61B

000000-999999

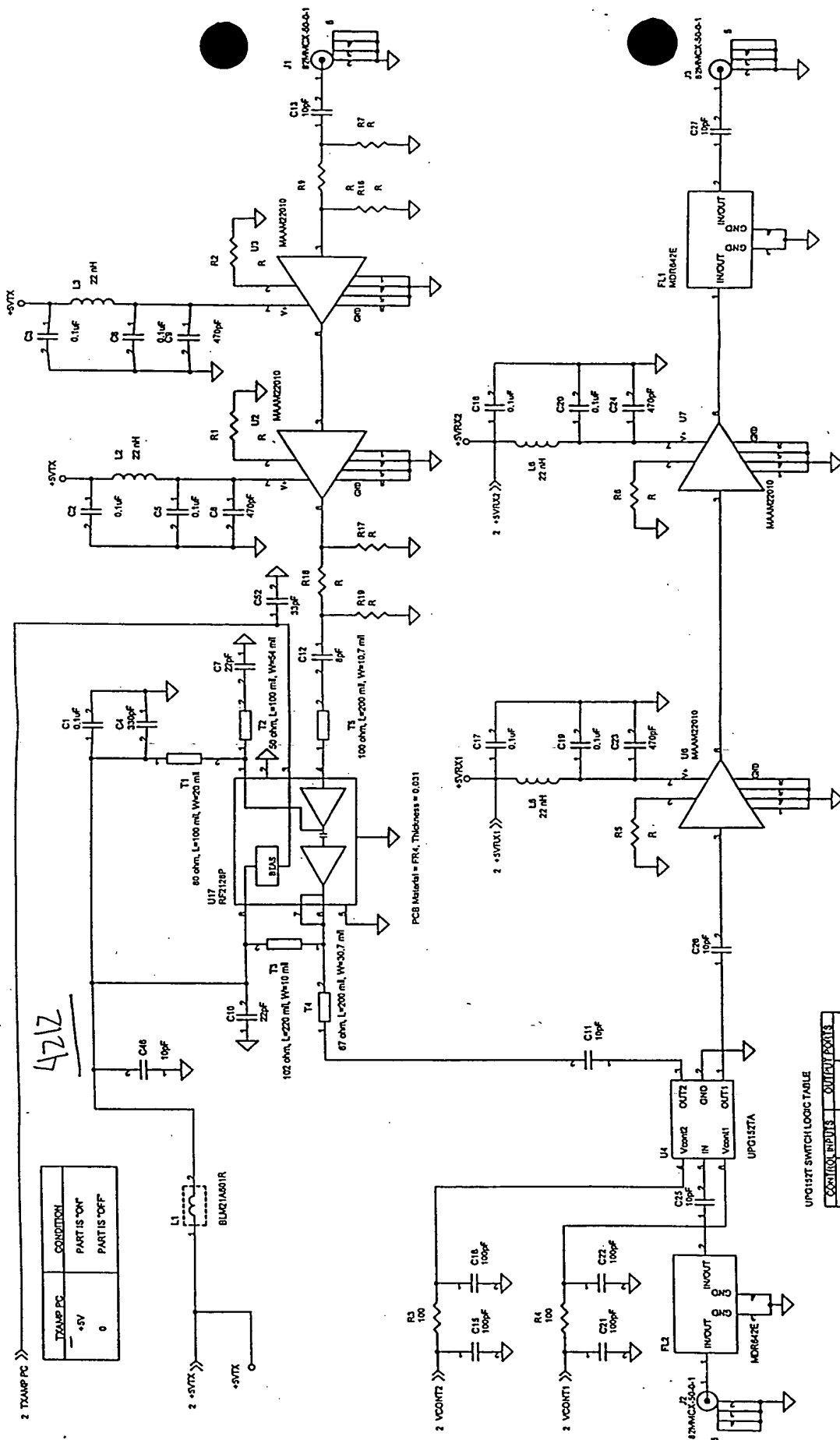
MOTHER BOARD FOR PCMCIA TEST BED

[illegible]

STB500.641.023 VOL 01

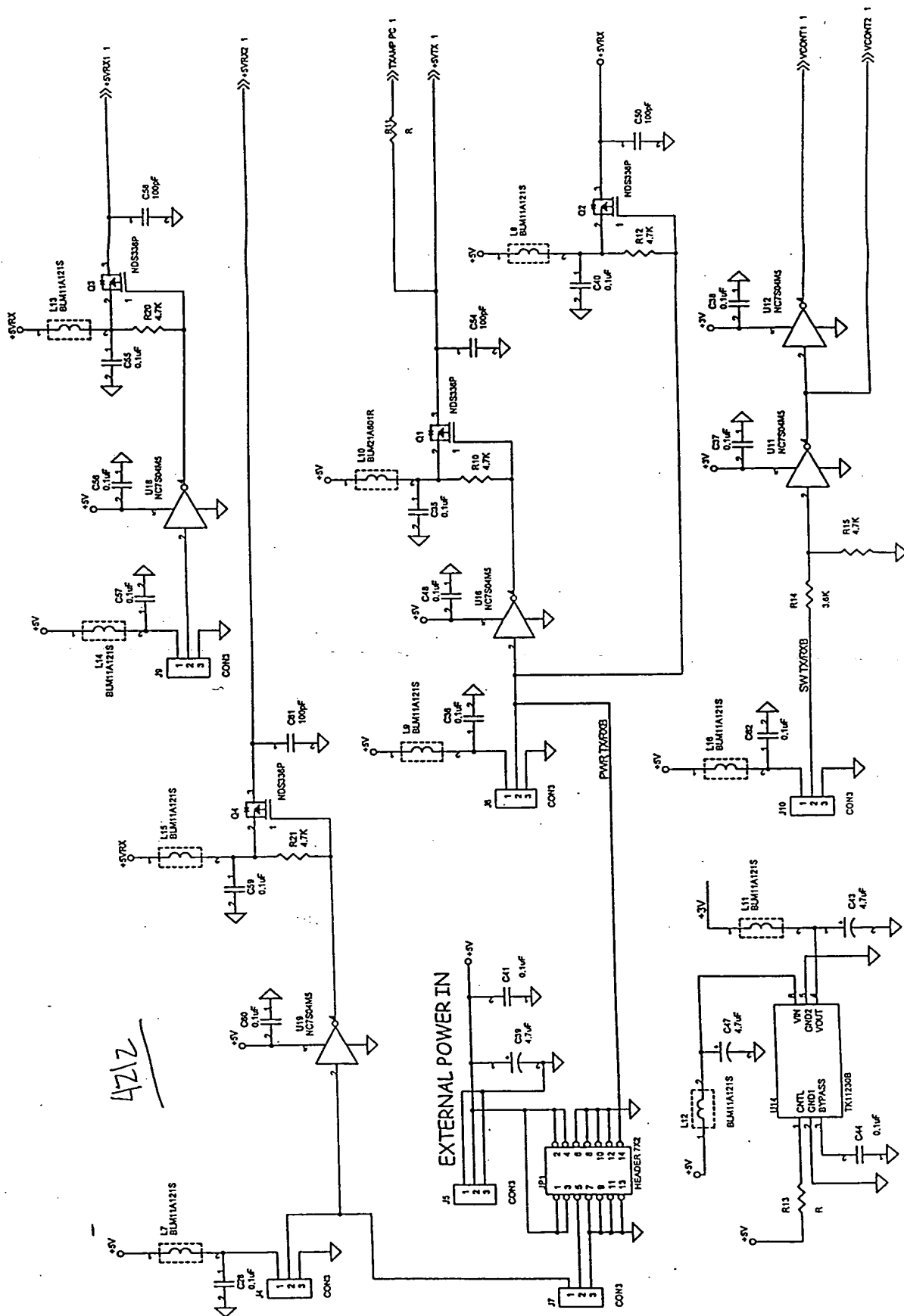
FIG. 63

FIG. 64



000000"5562500

FIG. 65



8500.641.024 Vol.

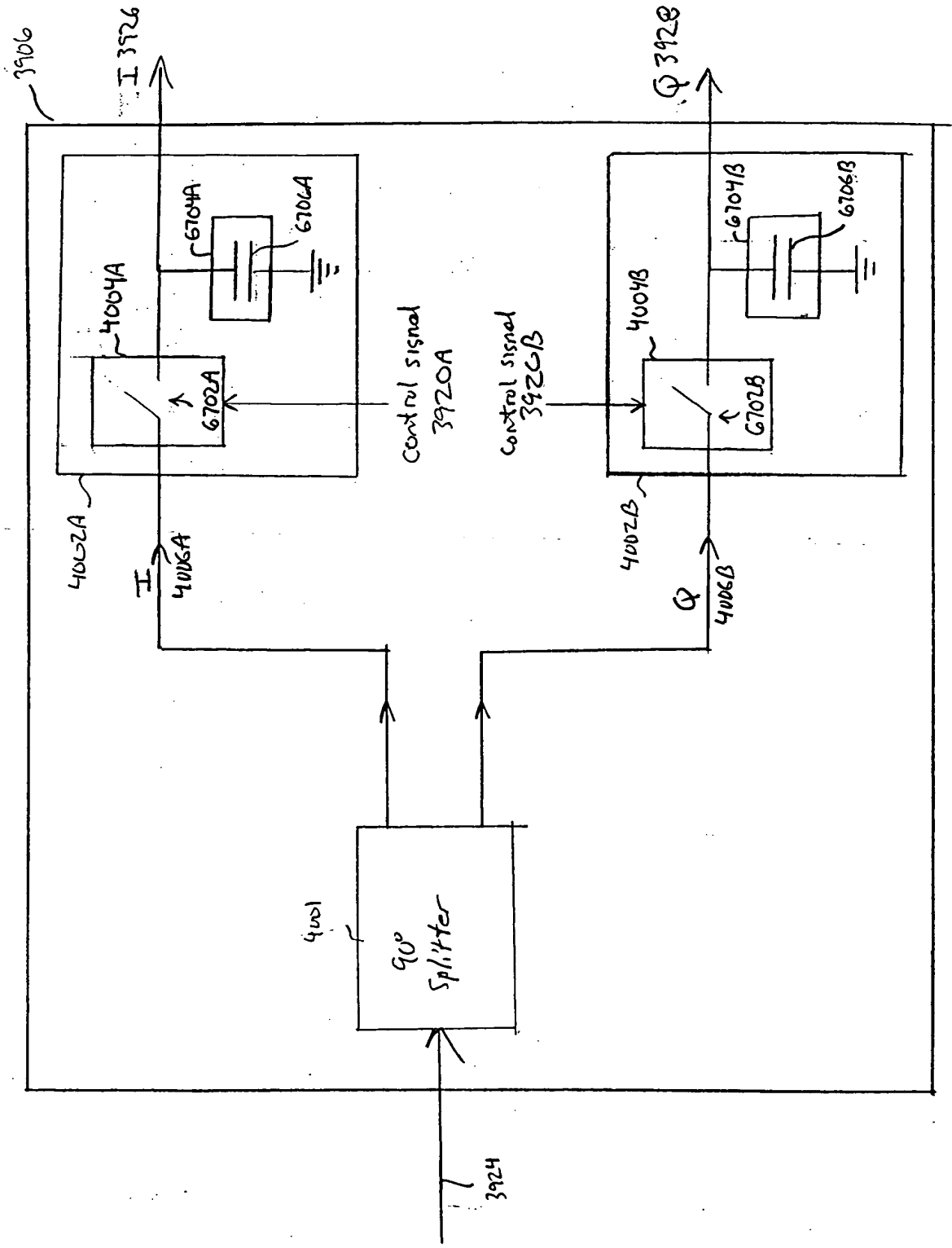


FIG. 67A

001080 5522300

3706

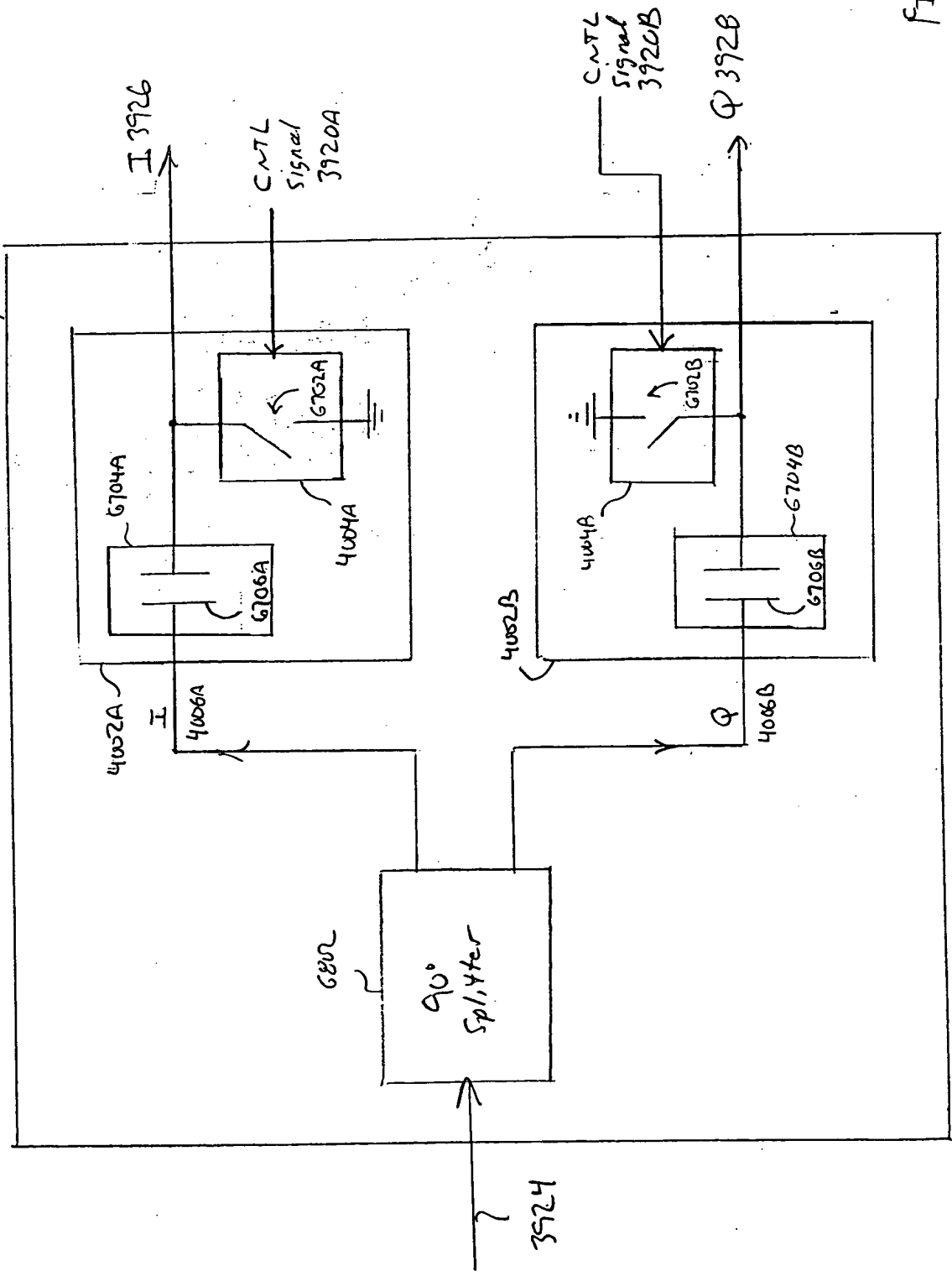


FIG. 67B



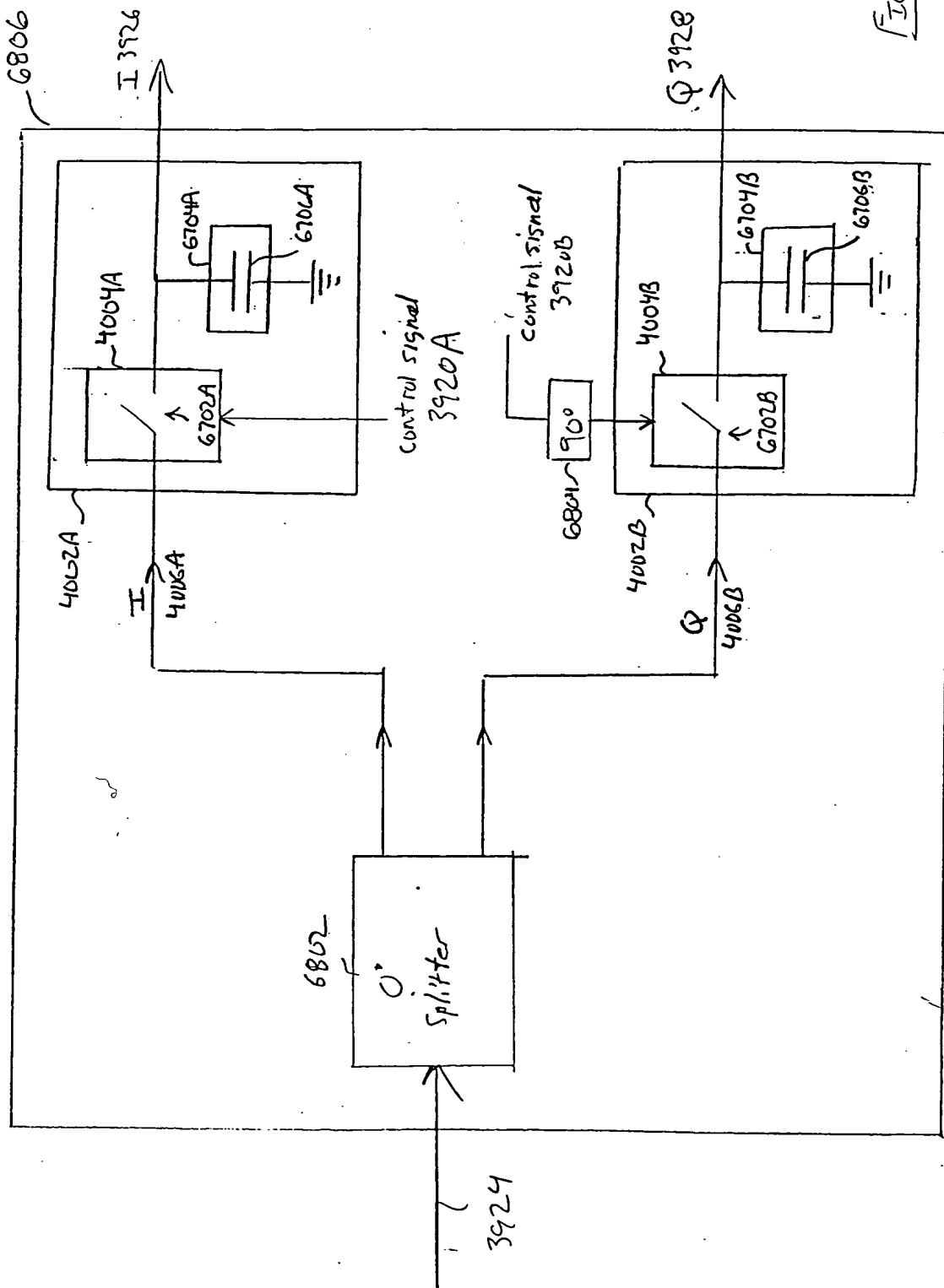


Fig. 68A

000000 5522500

3706

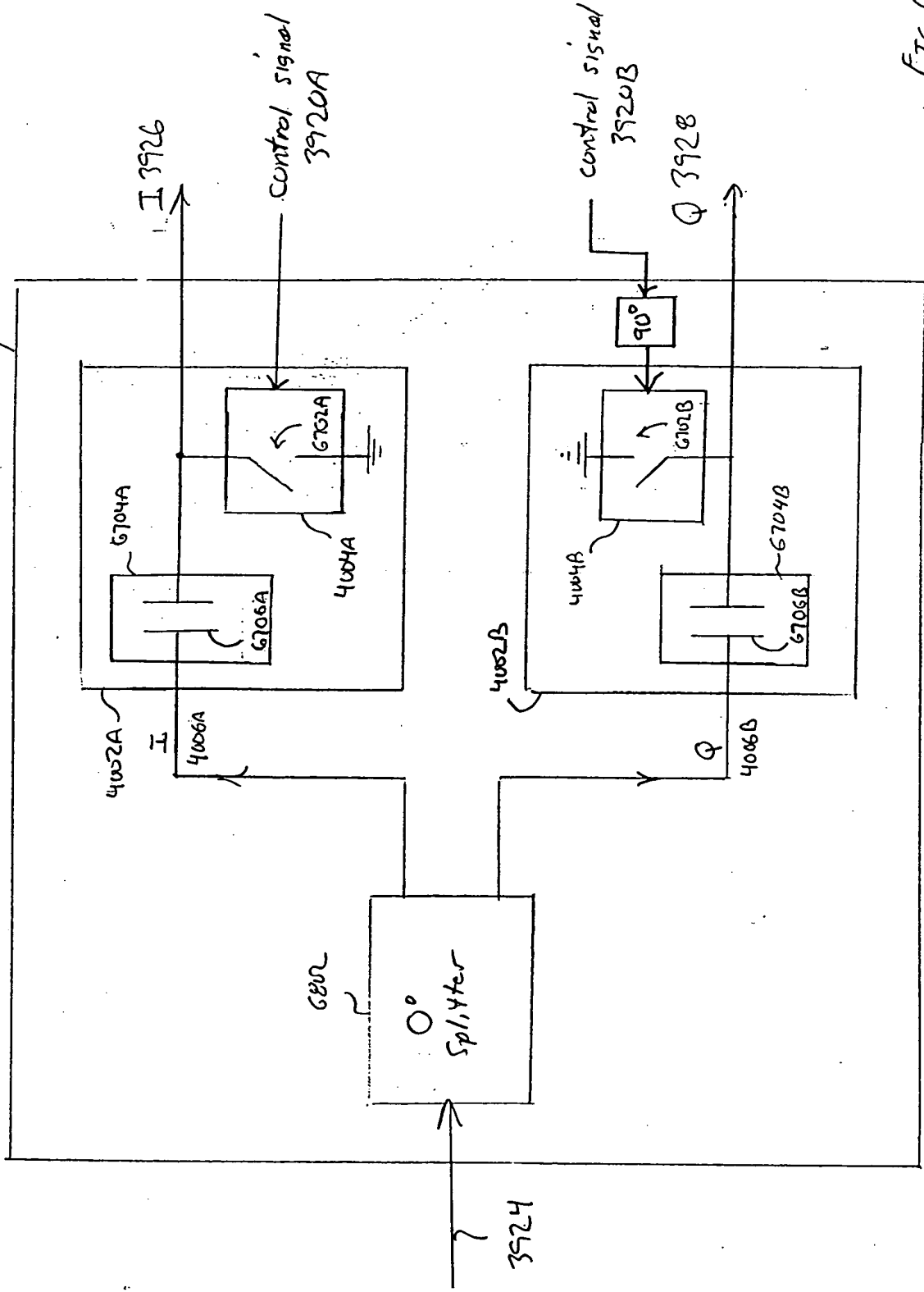


FIG. 68B

FIG. 69A

3106

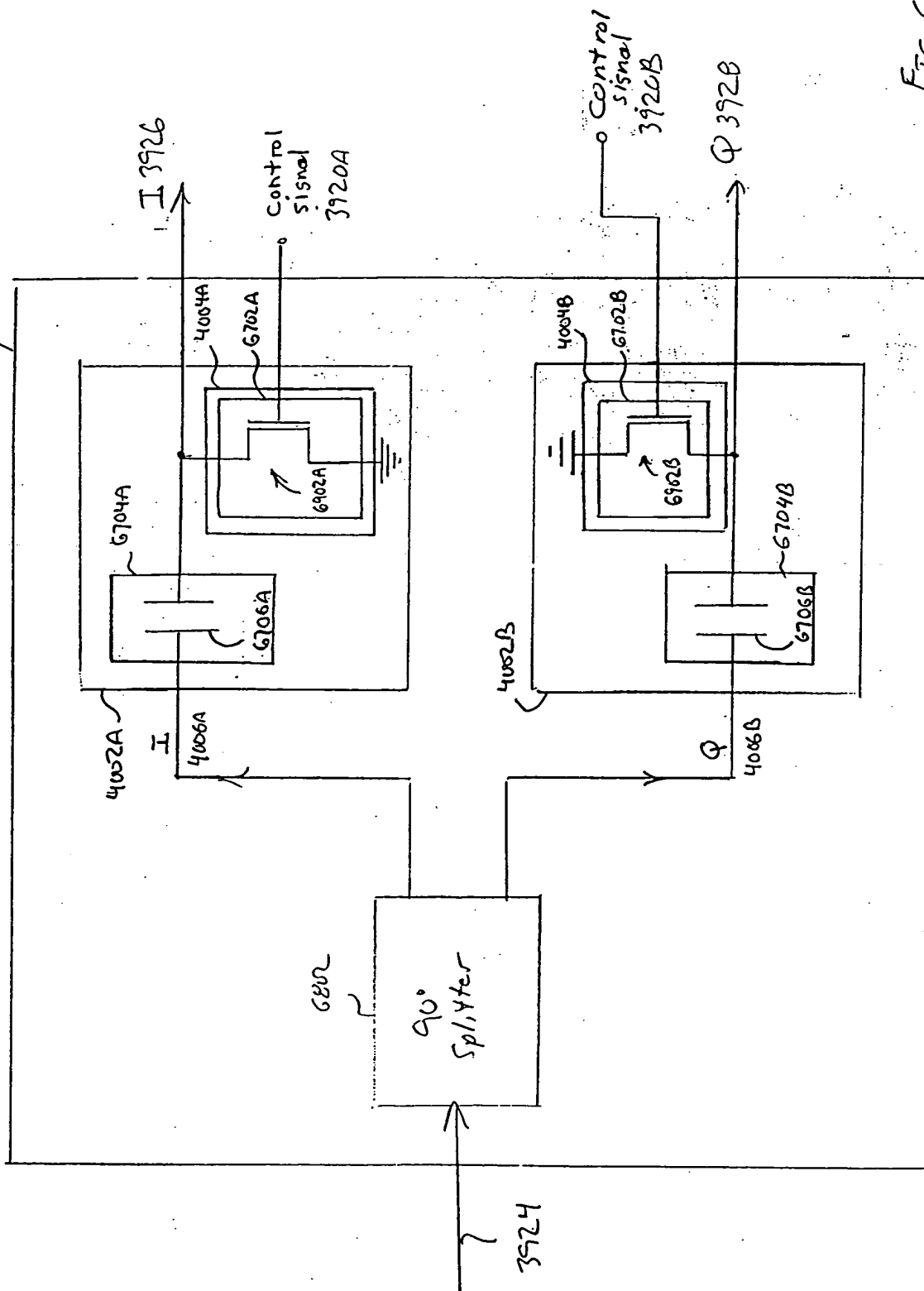
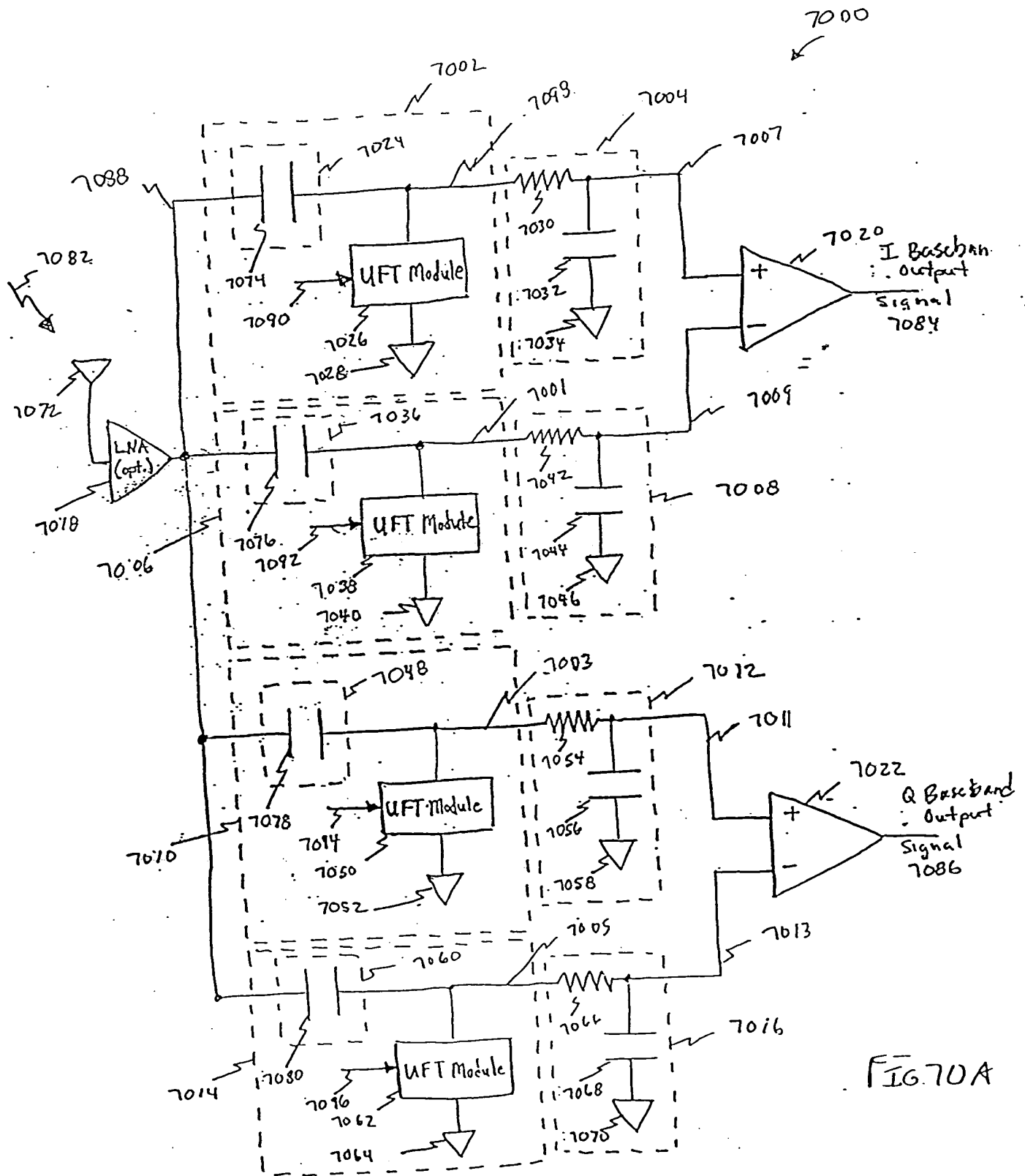


FIG. 69B

000000-55622560



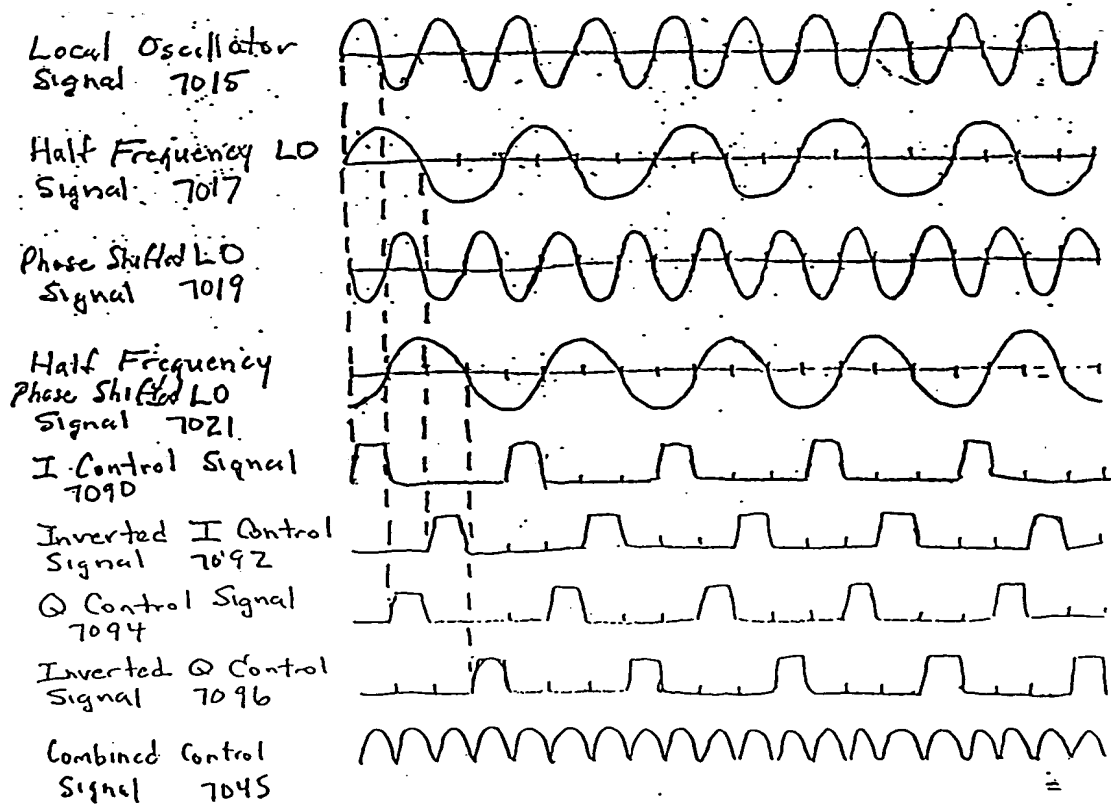
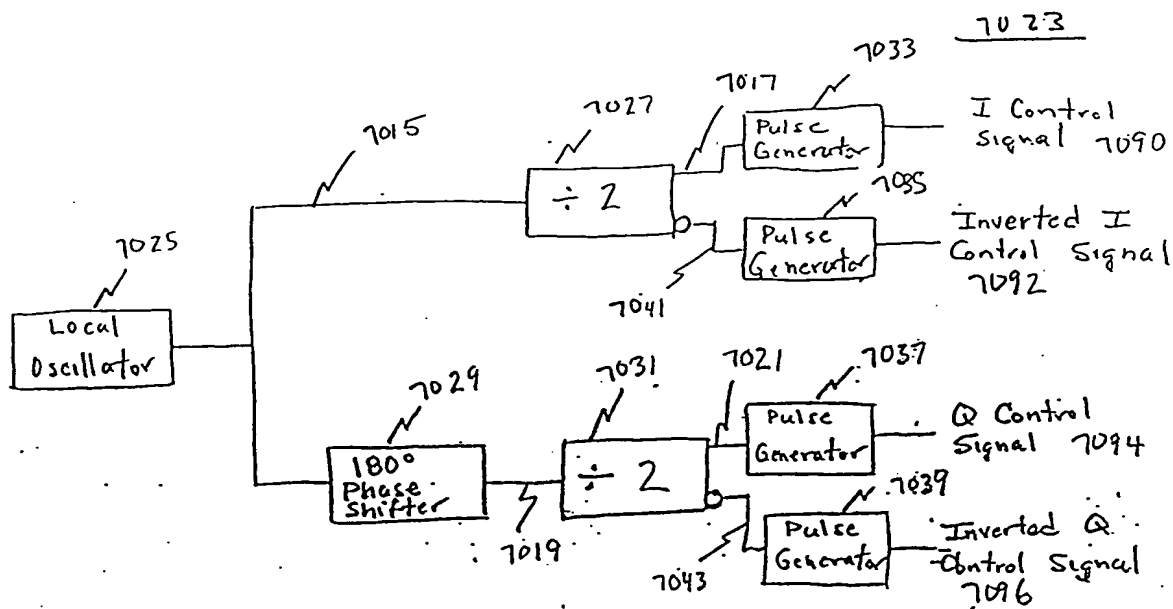


FIG. 70C

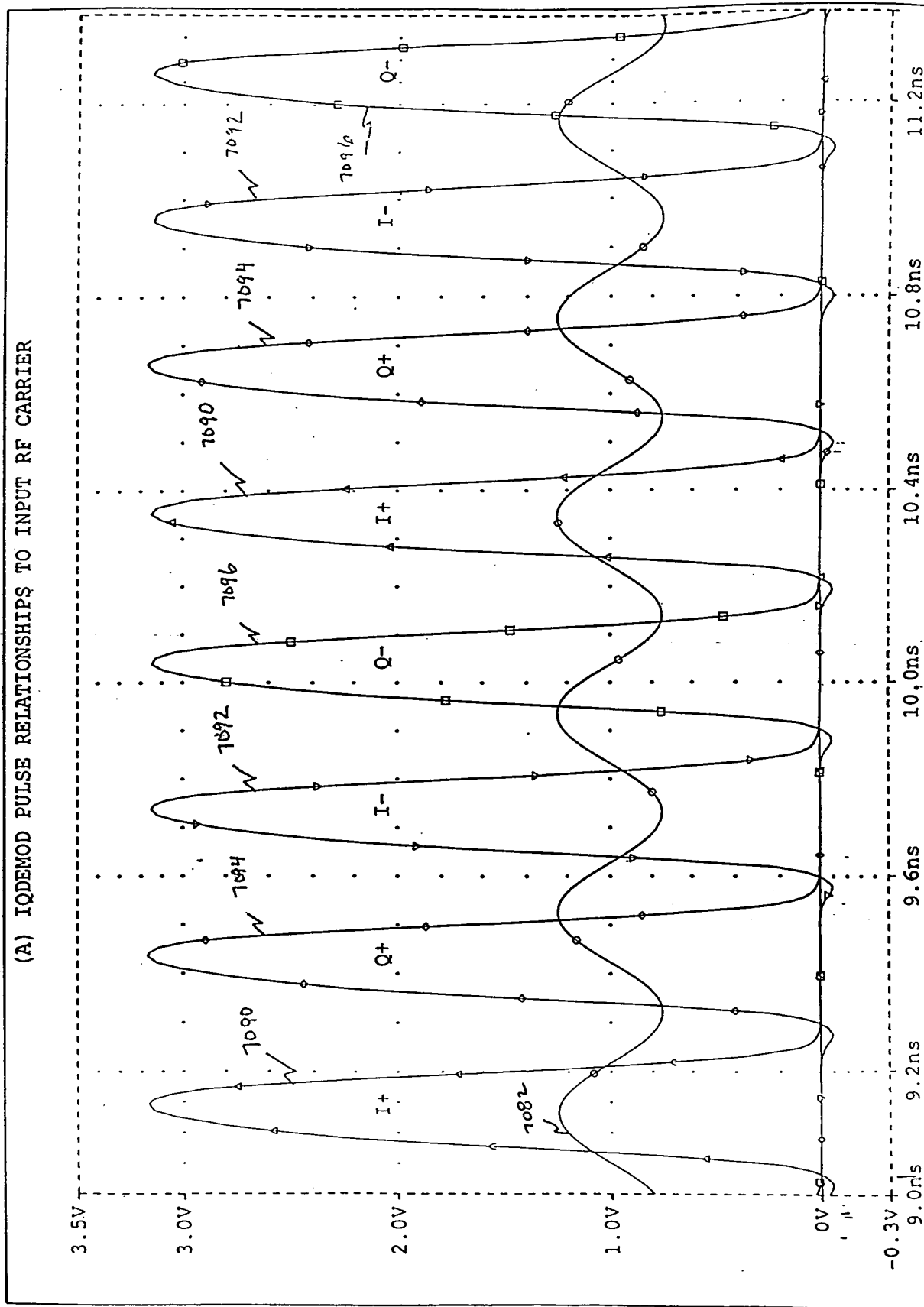


FIG. 70D

21900 ✓

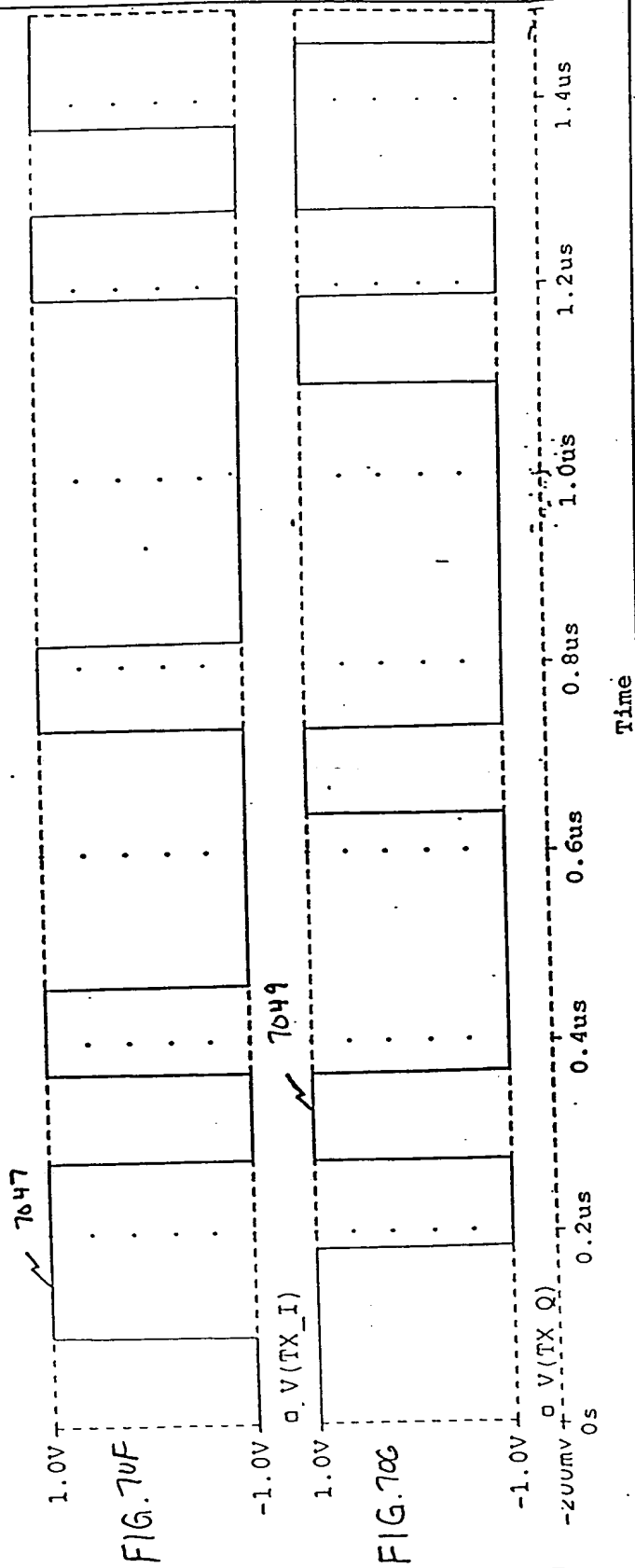


FIG. 70E

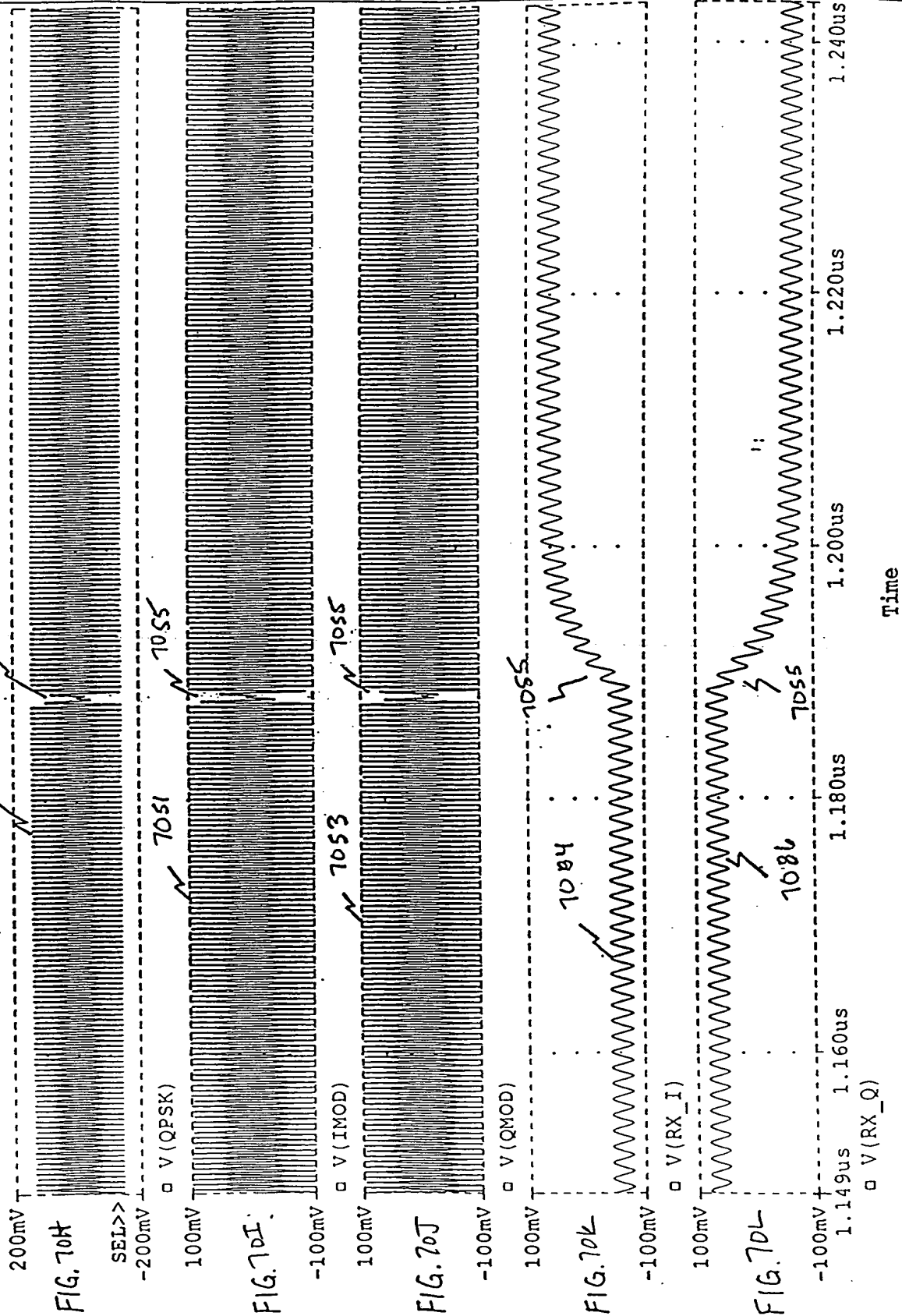


000000-55822560

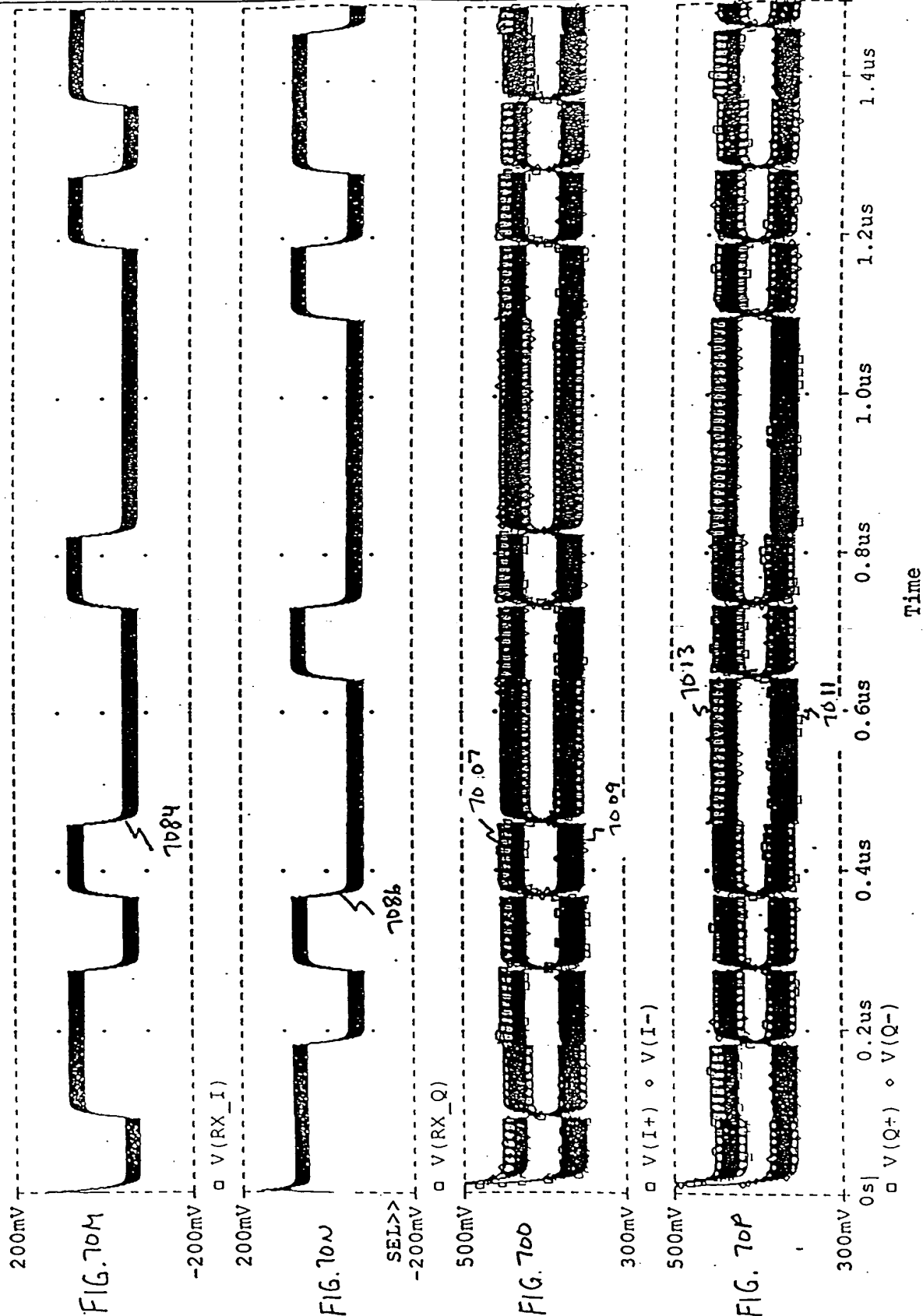
(A) IQDEMOD SHOWING TIME RELATIONSHIP OF TX. I AND Q DATA



(B) IQDEMOD SHOWING QPSK MOD OUTPUT (TOP) WITH IMOD AND QMOD AND I AND Q DATA (BOTTOM)



(B) IQDEM0D RELATIONSHIP OF I AND Q RECEIVED DATA DIFFERENTIAL (BOTTOM) AND SINGLE ENDED AFTER DIFF AMP.



The diagram illustrates a baseband processor circuit. It features two parallel signal paths, each enclosed in a dashed rectangular box. The top path includes a UFT Module (7026) and a variable gain amplifier (7028). The bottom path includes a UFT Module (7038) and a variable gain amplifier (7040). Both paths are controlled by a First Control Signal (7043) and a Second Control Signal (7095). The outputs of these paths are combined in a summing junction (7020) to produce the Baseband Output Signal (7099). The circuit is powered by a 7097 supply and includes various passive components like resistors (7002, 7004, 7006, 7008) and capacitors (7074, 7076, 7078, 7080). A 7091 component is also shown at the top right.

FIG. 70Q

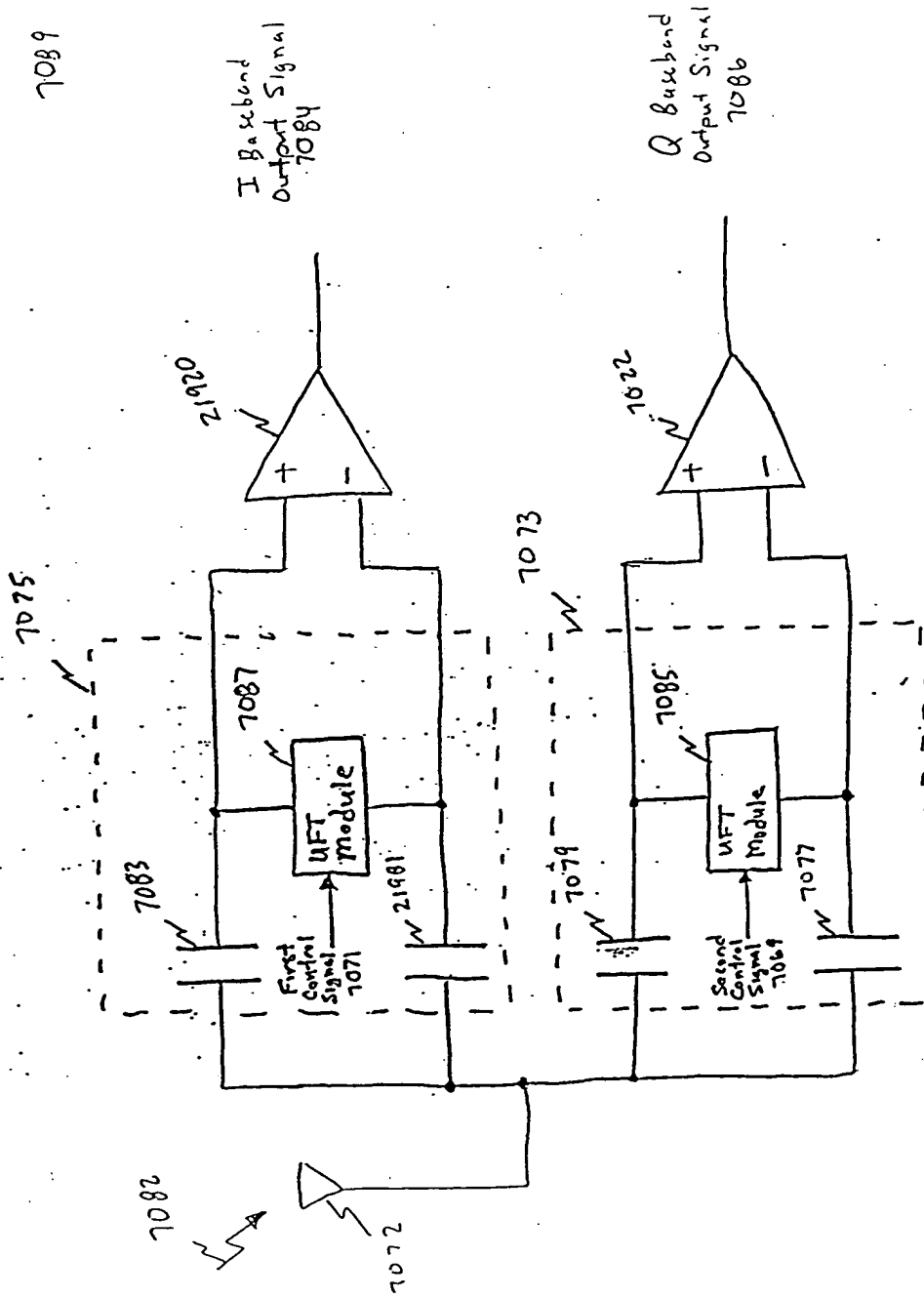


FIG. 70 R

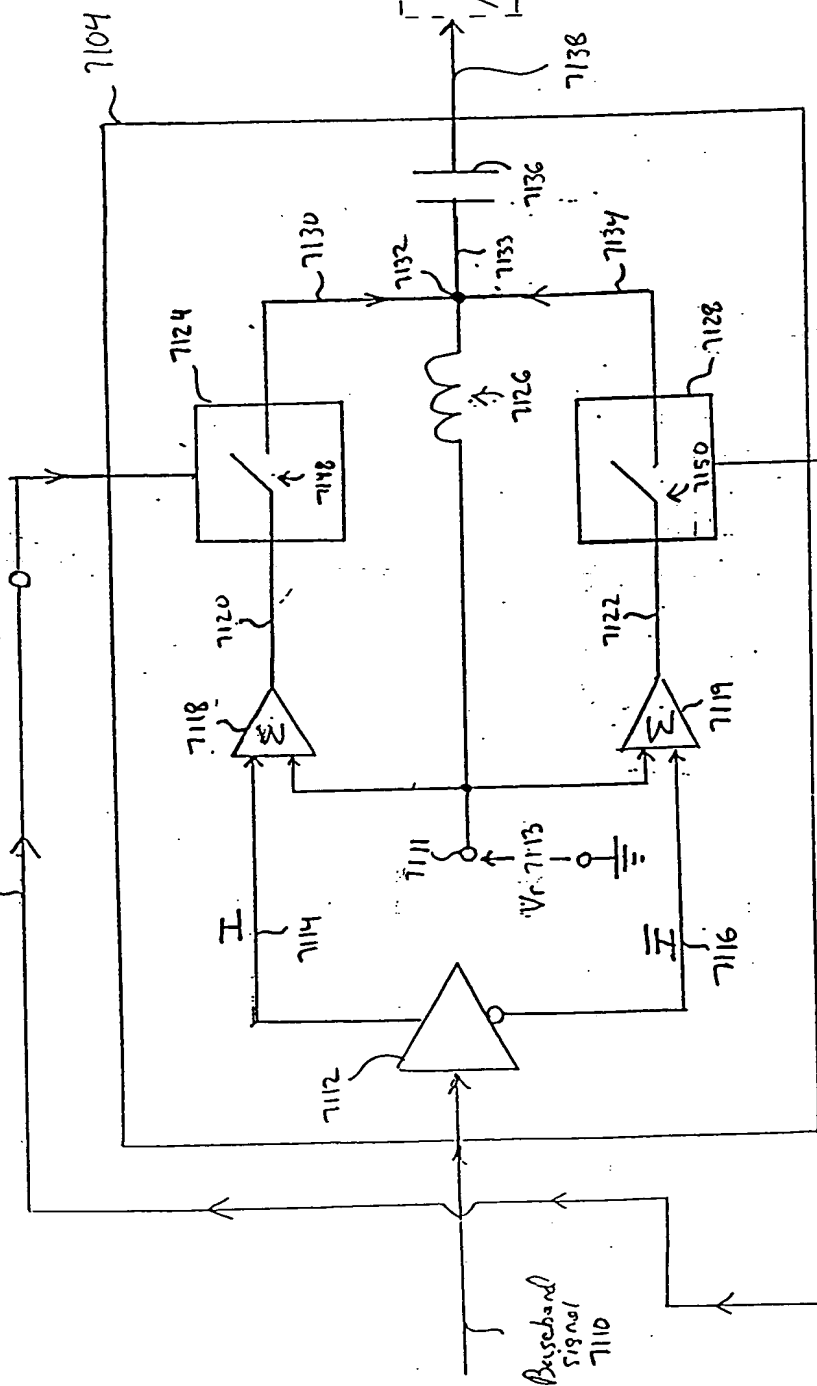
FIG. 70S

FIG. 70S

CNTL  
Signal 7123

CNTL  
Signal 7123

2017



Beischand  
51813

5262 7127  
CMTL

Pulse Generator

Fig. 71A

Fig. 71A

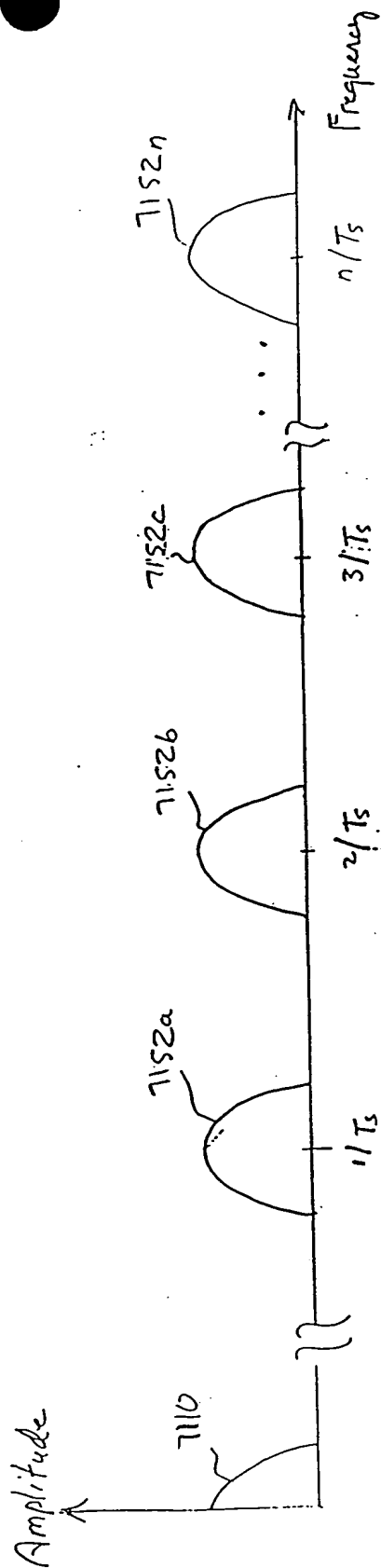


FIG. 71B



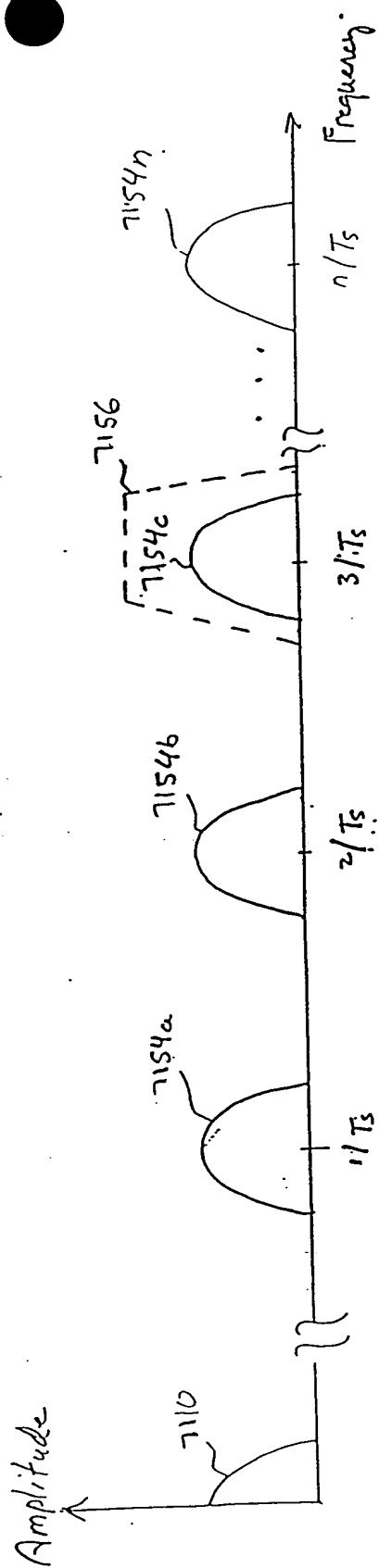


FIG 71C

001000 5522560

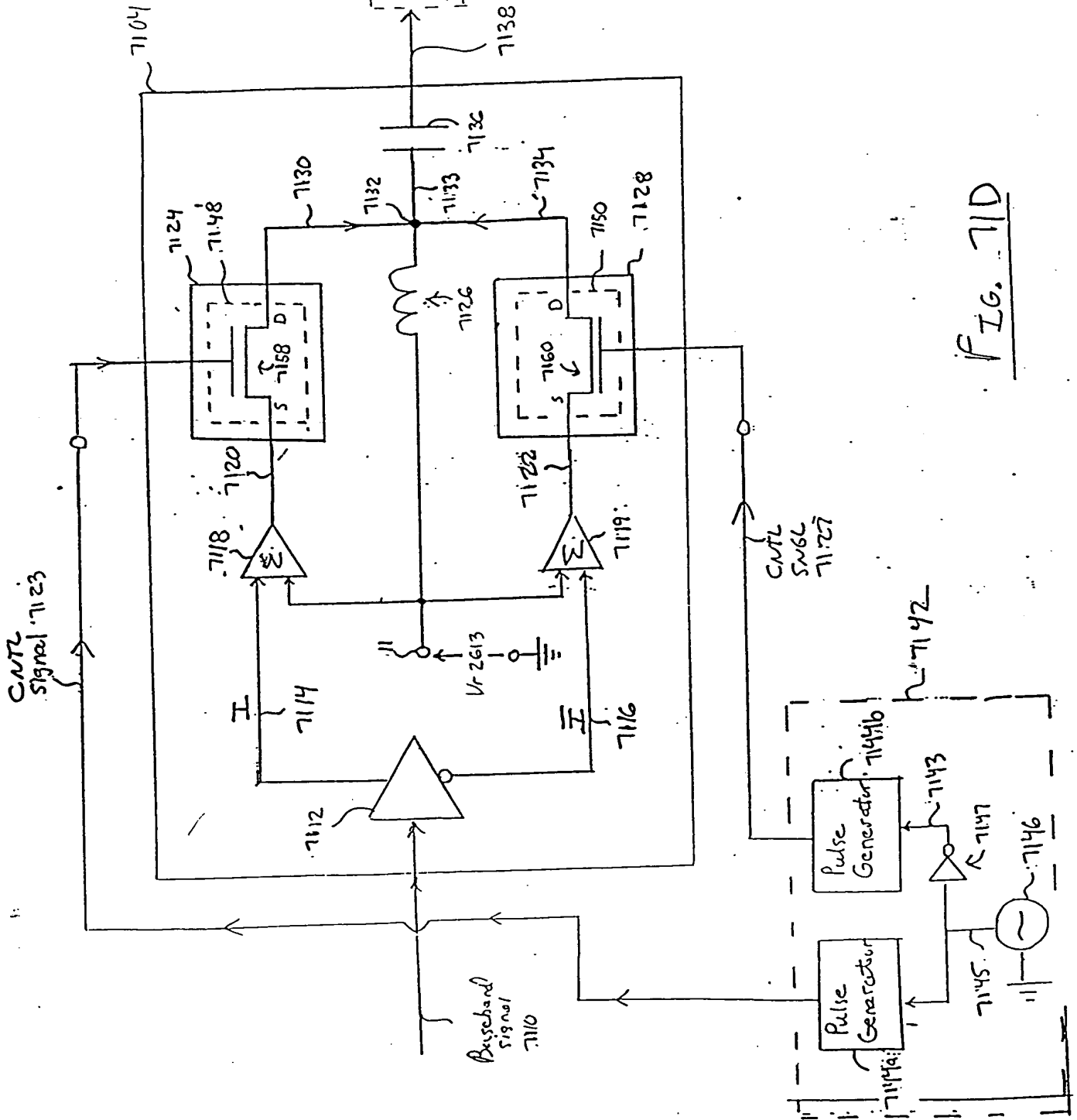


Fig. 71D

FIG. 72A

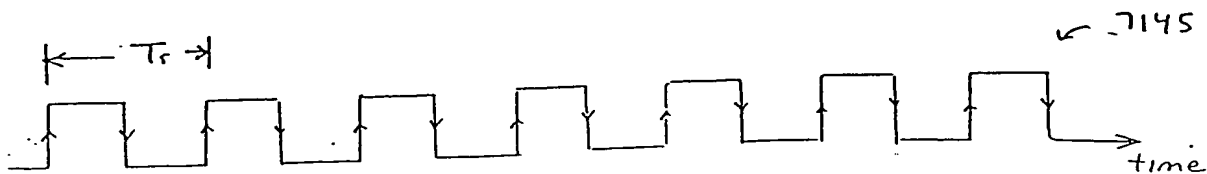


FIG. 72B

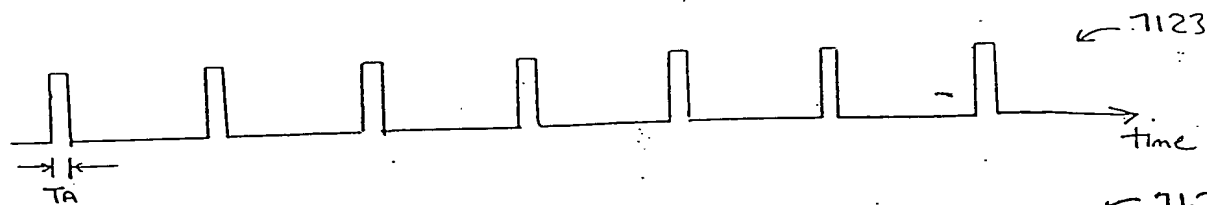


FIG. 72C

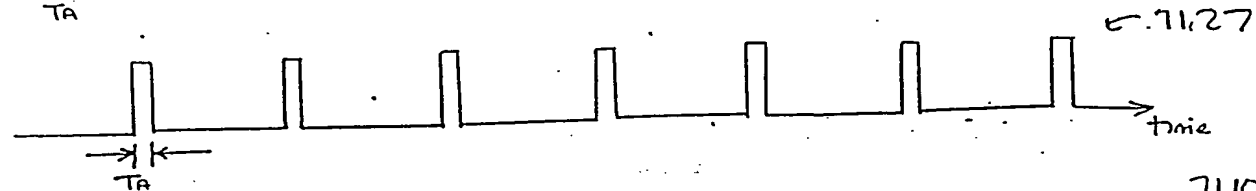


FIG. 72D

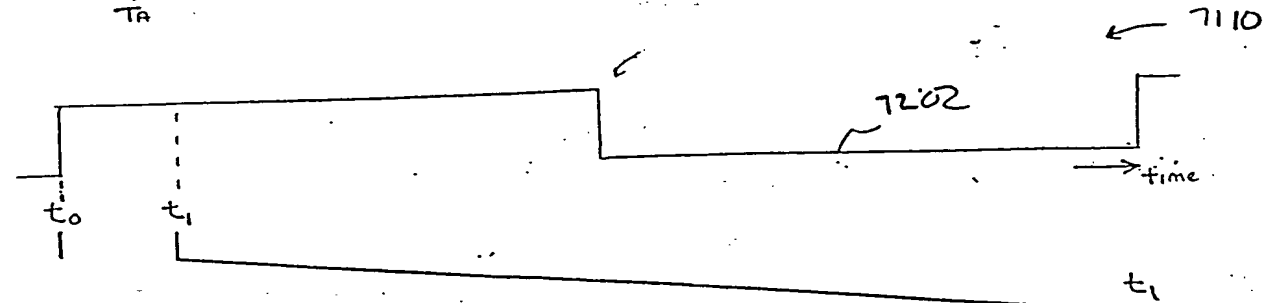


FIG. 72E

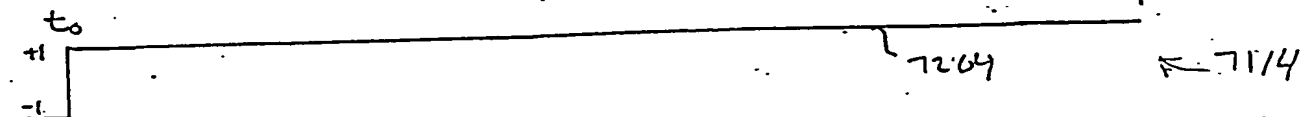


FIG. 72F



FIG. 72G

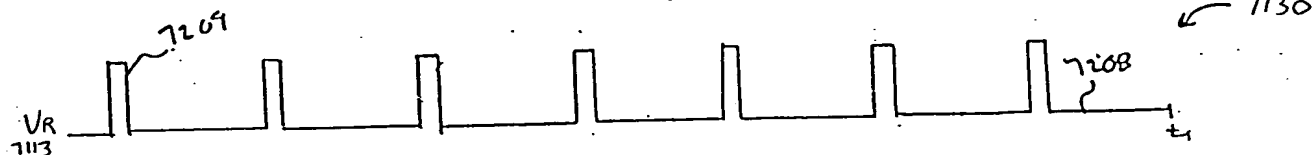


FIG. 72H

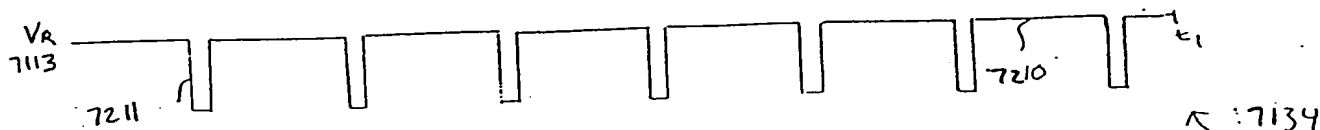


FIG. 72I

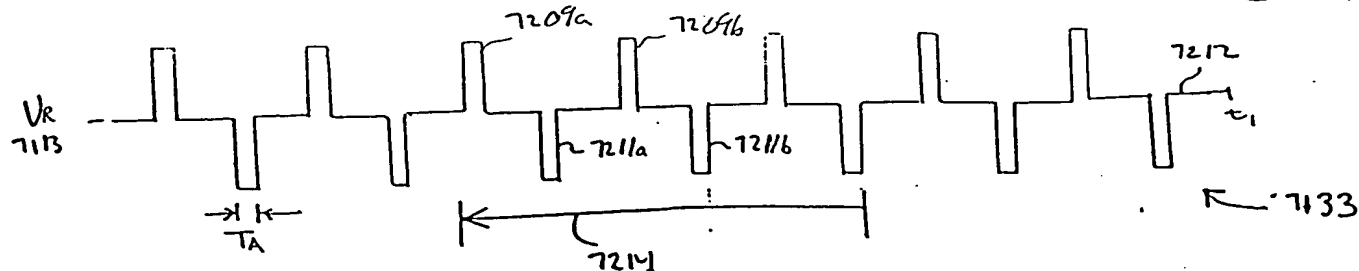
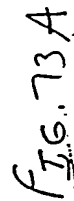
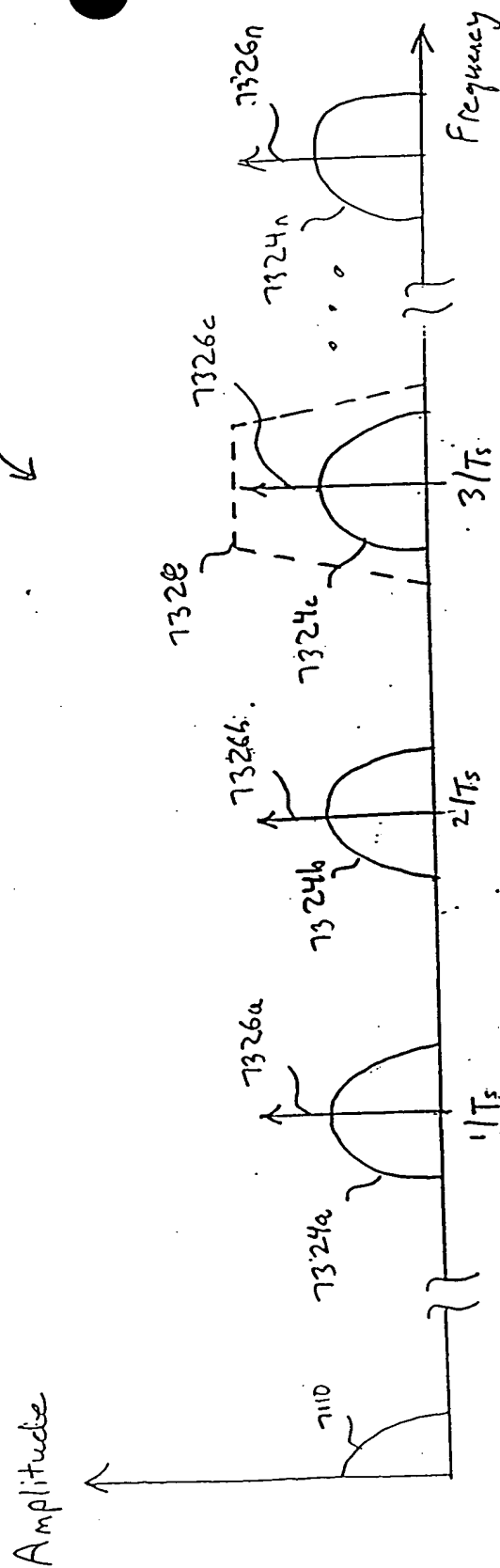


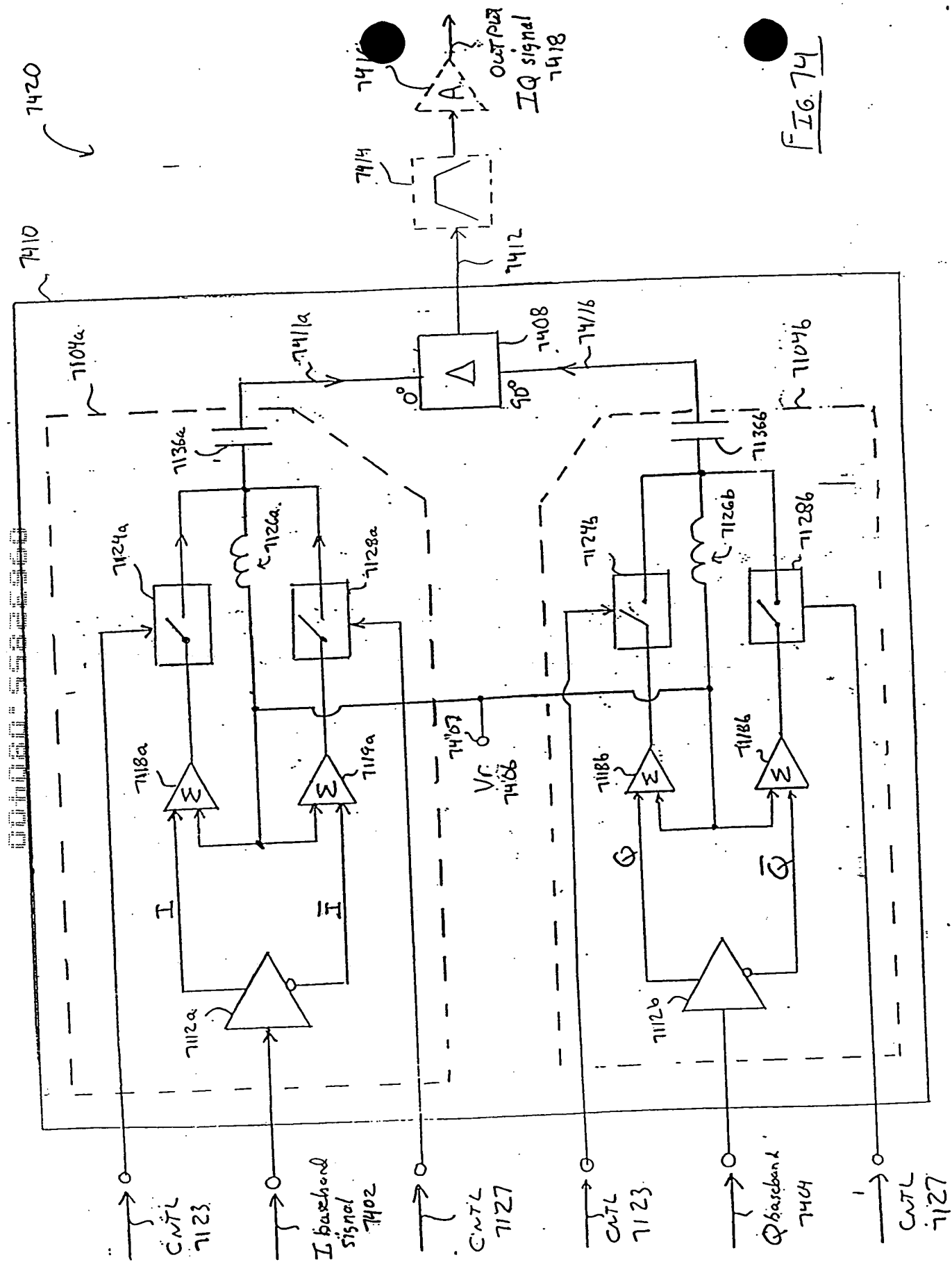
FIG. 72J

7352



7320





7420

7410

7414  
7412  
7418  
Output  
IQ signal

FIG. 74

CNTL 7127

Q baseband 7404

CNTL 7123

CNTL 7127

I baseband signal 7402

CNTL 7123





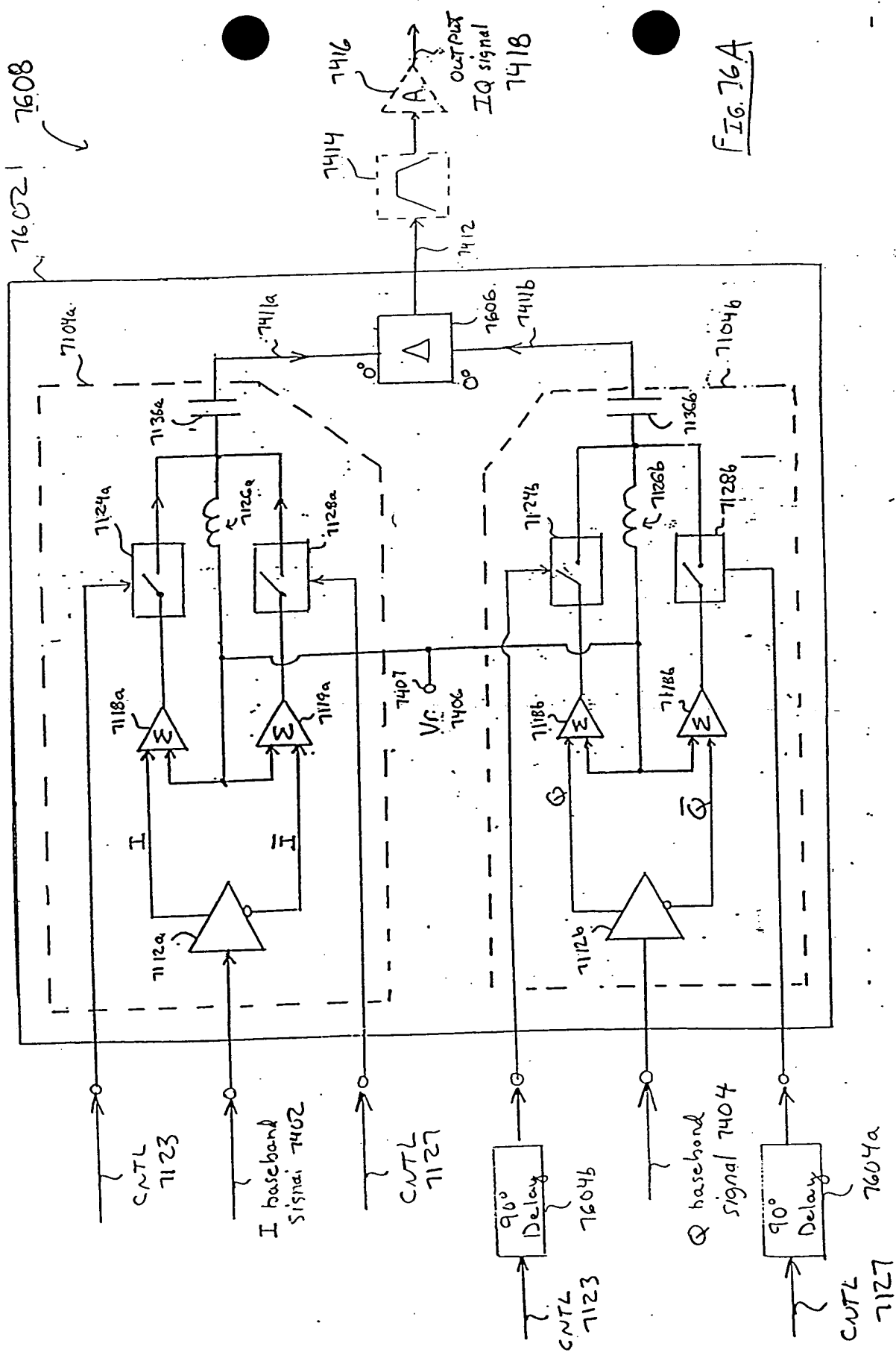
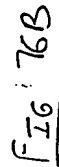


FIG. 76A

819L → 029L





000005022360

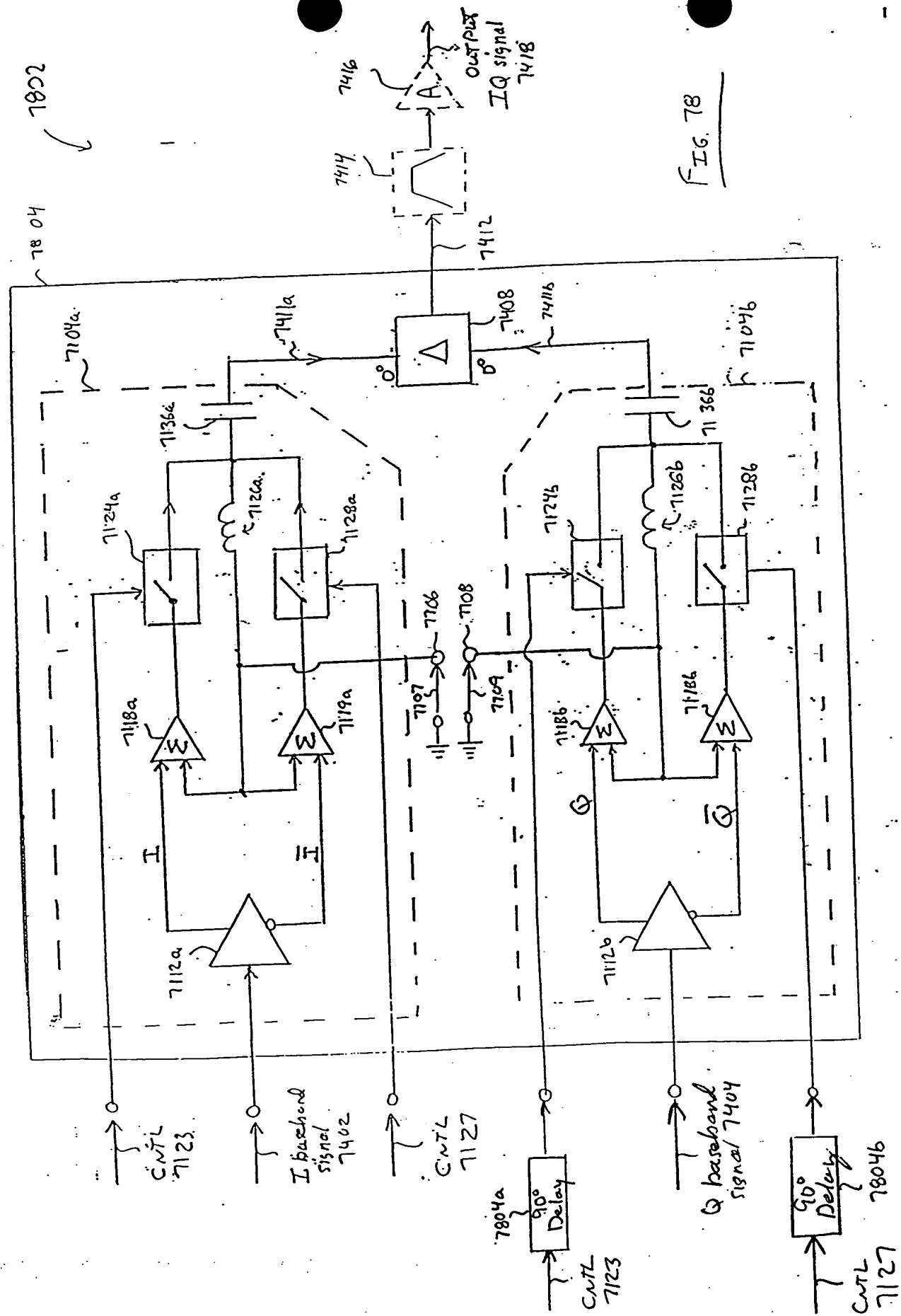
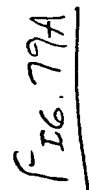


FIG. 78

7  
available



CNTL  
Signal  
generator

7914

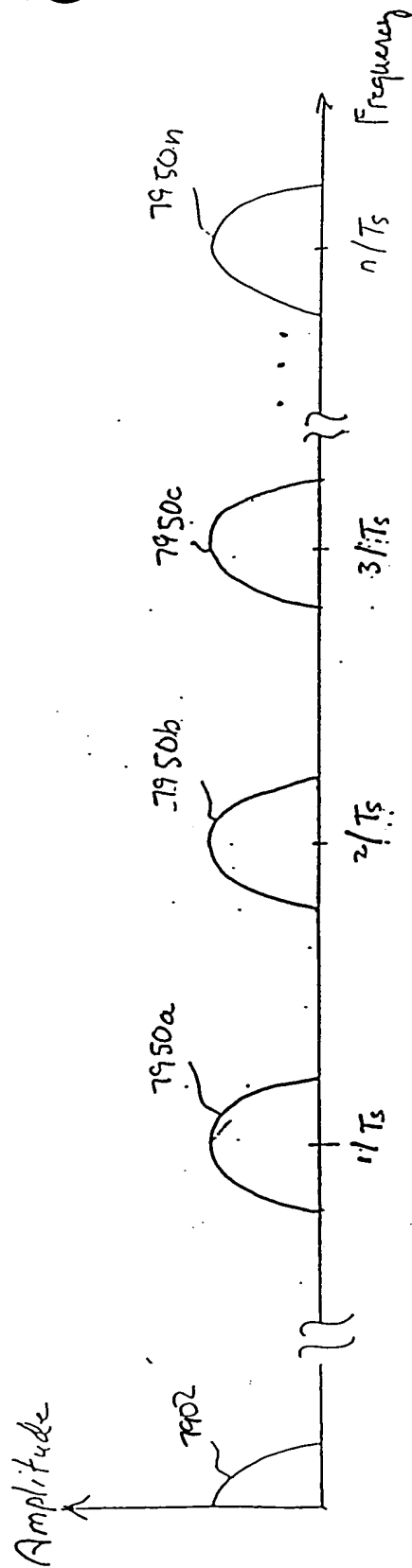


FIG. 79B

7932

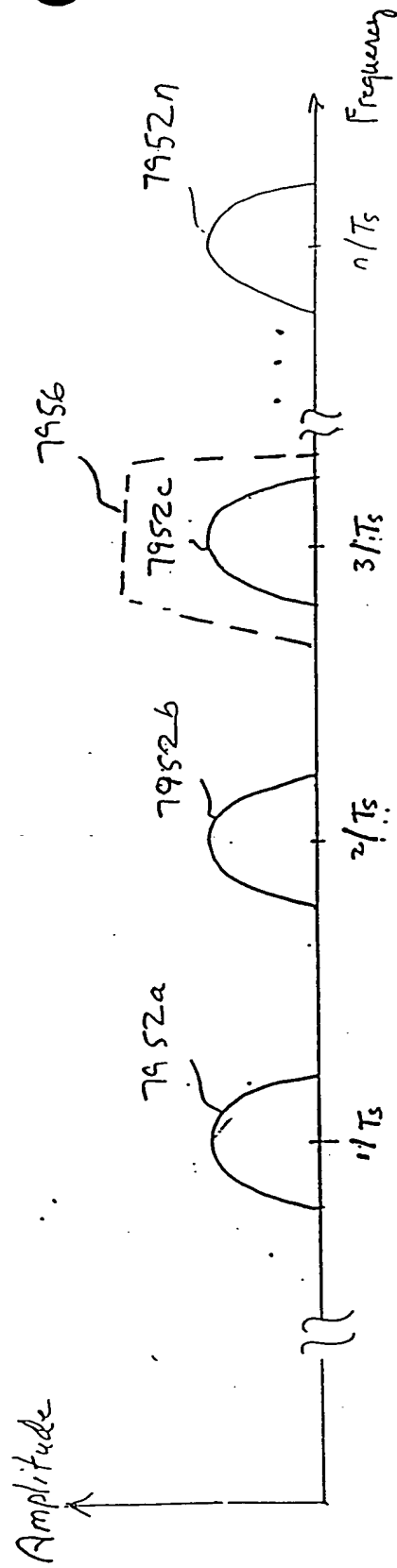


FIG. 79c

7900

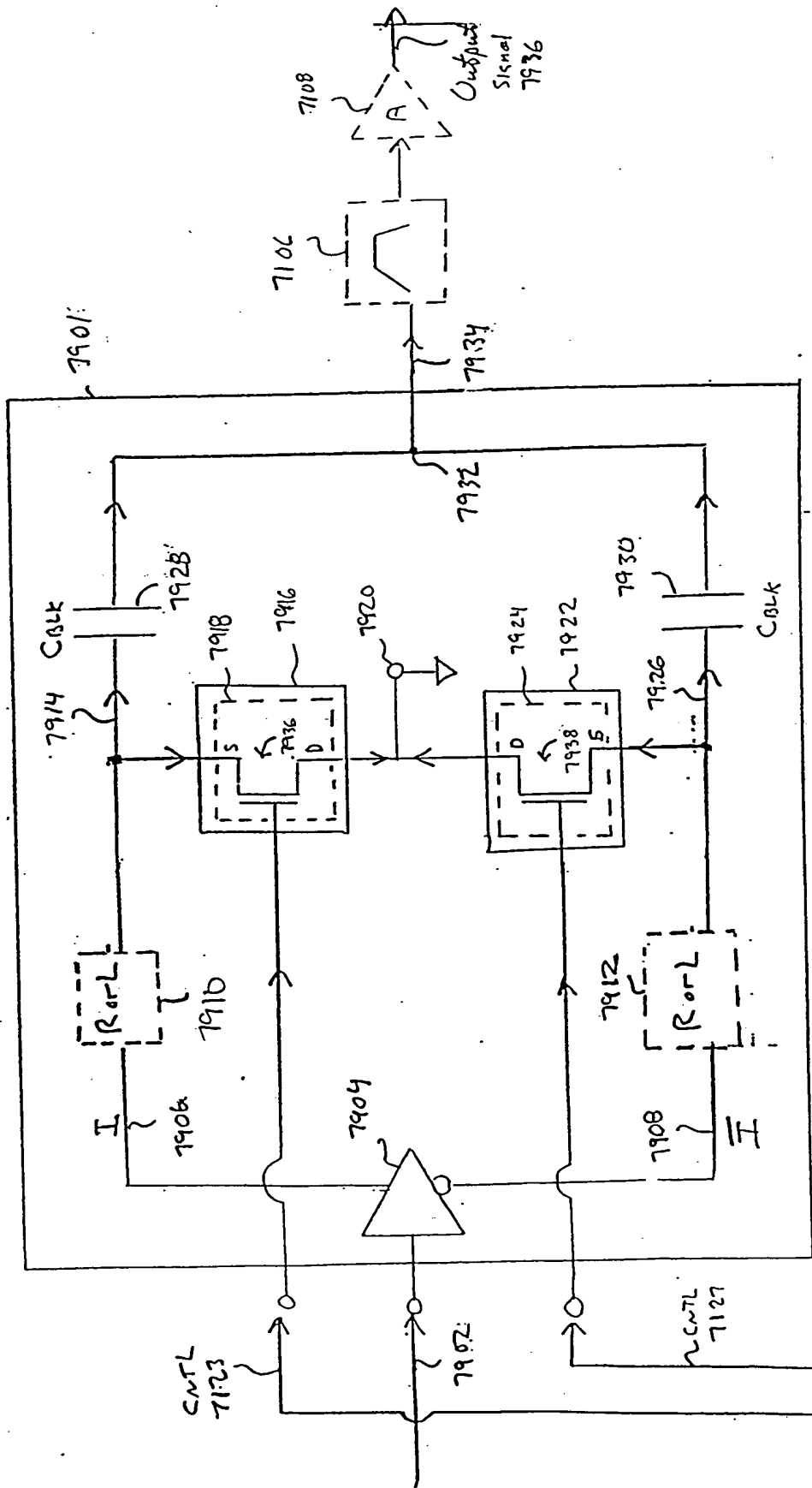


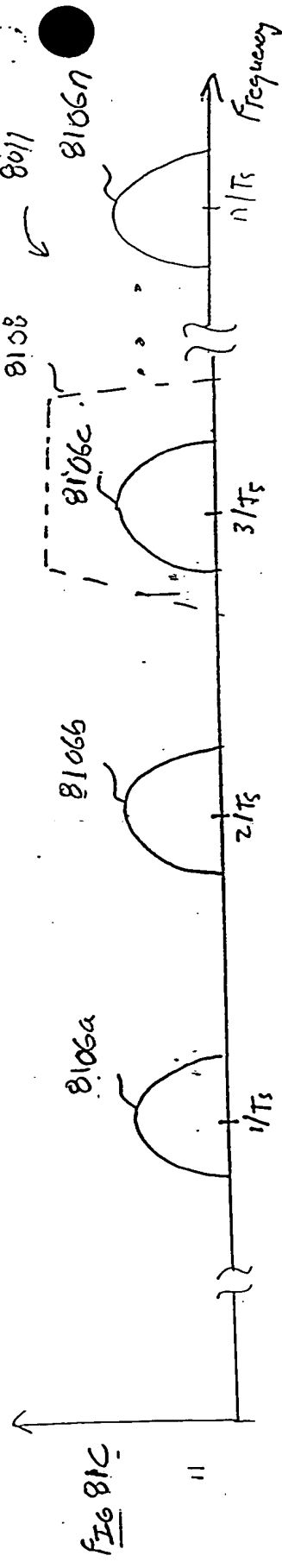
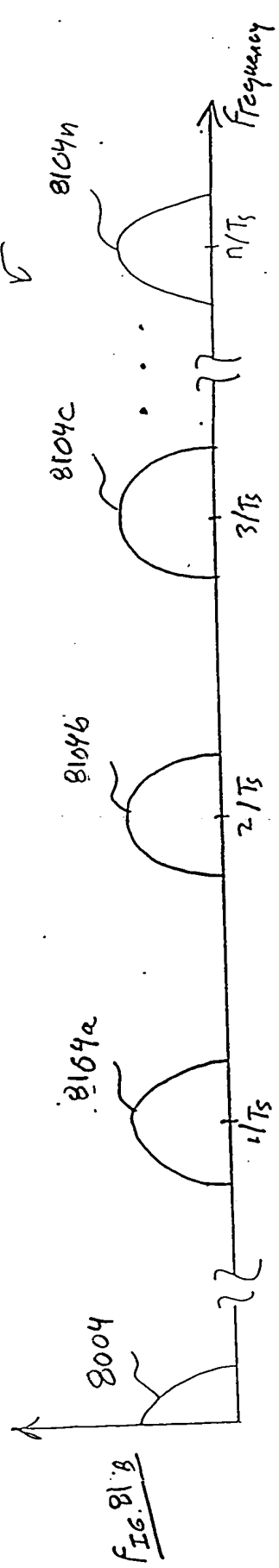
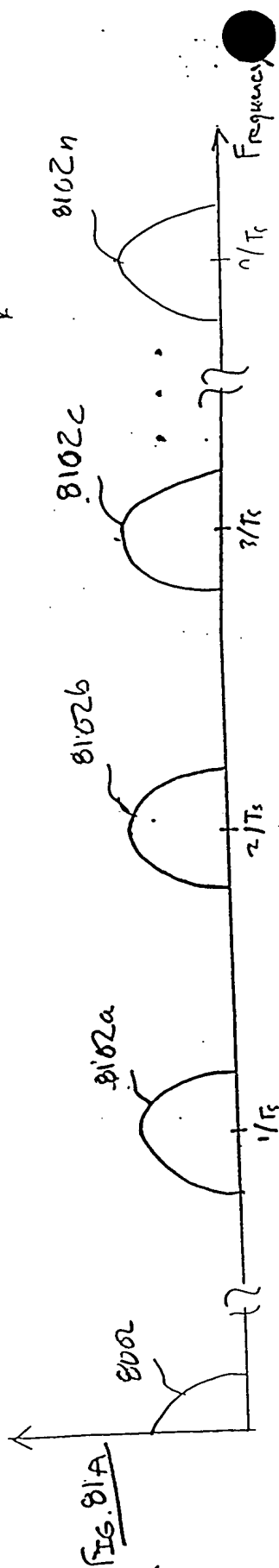
FIG. 7A

CNTL  
Signal  
generator

7142







8200

8202

CNTL  
7143

I baseband  
8002

CNTL  
7127

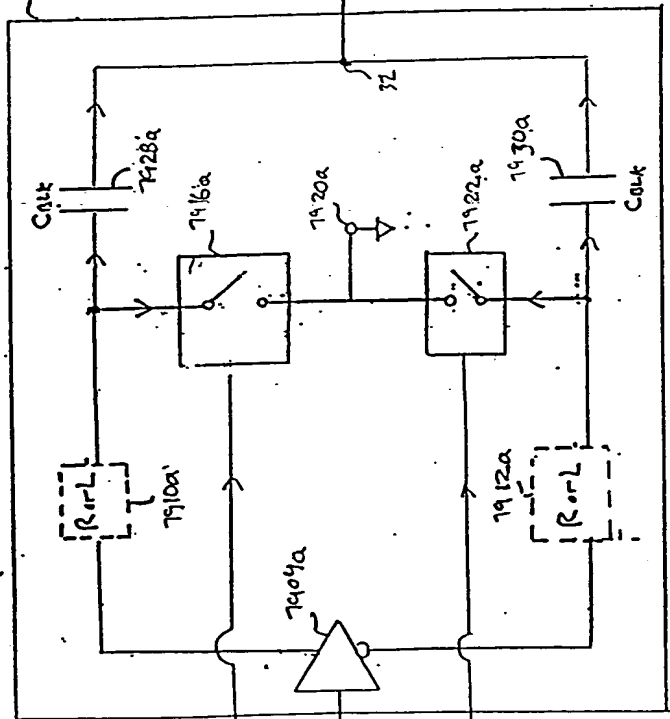
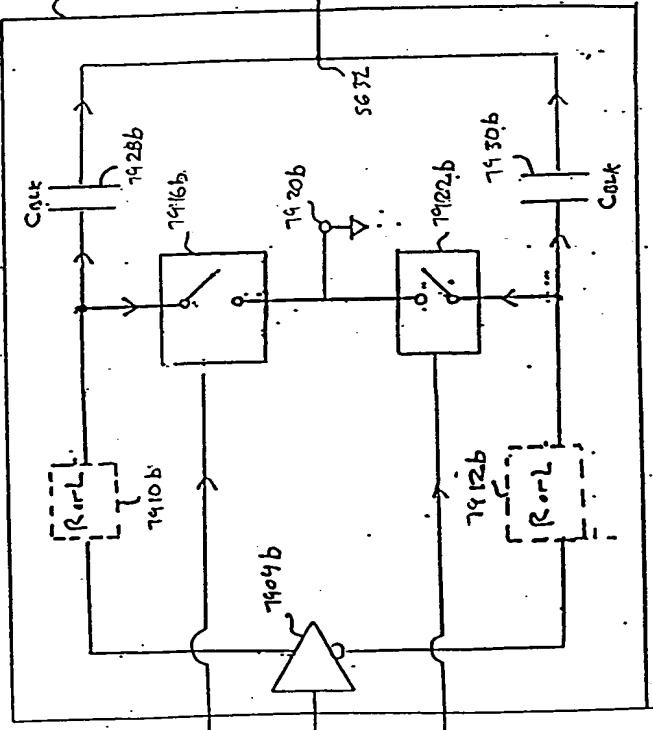
CNTL  
7123

Q baseband  
8004

CNTL  
7127

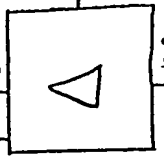
7901a

8008



8006

8206



8012

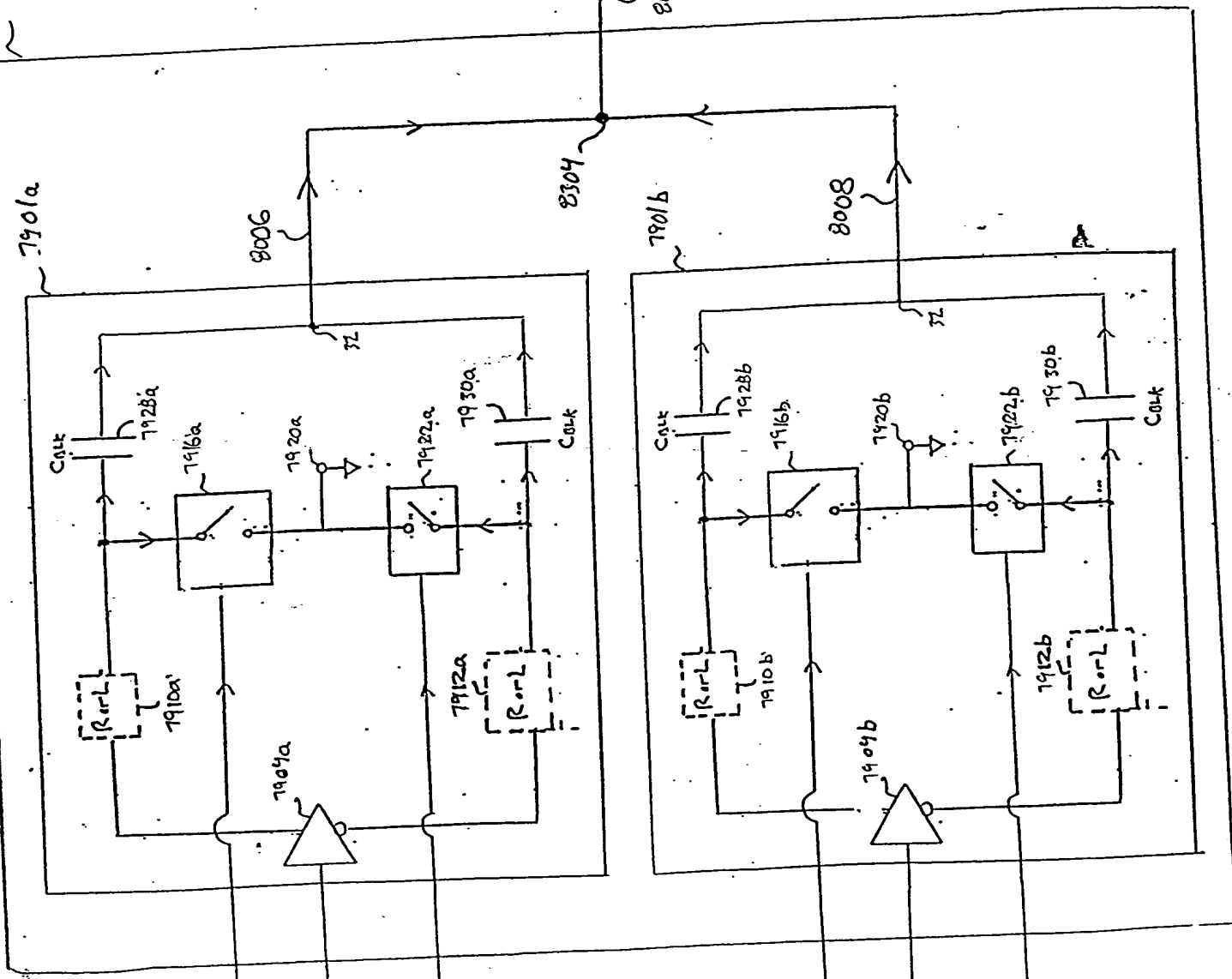
Output  
Signal  
8016

FIG. 82

00000 99999999

8300

8302



CNTL 7143

I baseband 8002

CNTL 7127

8204a

90° Delay

Q Baseband 8004

8204b

90° Delay

CNTL 7127

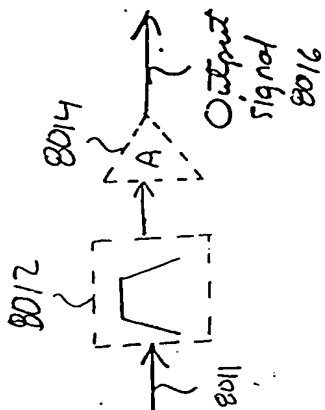


Fig. 83

000000 9922550

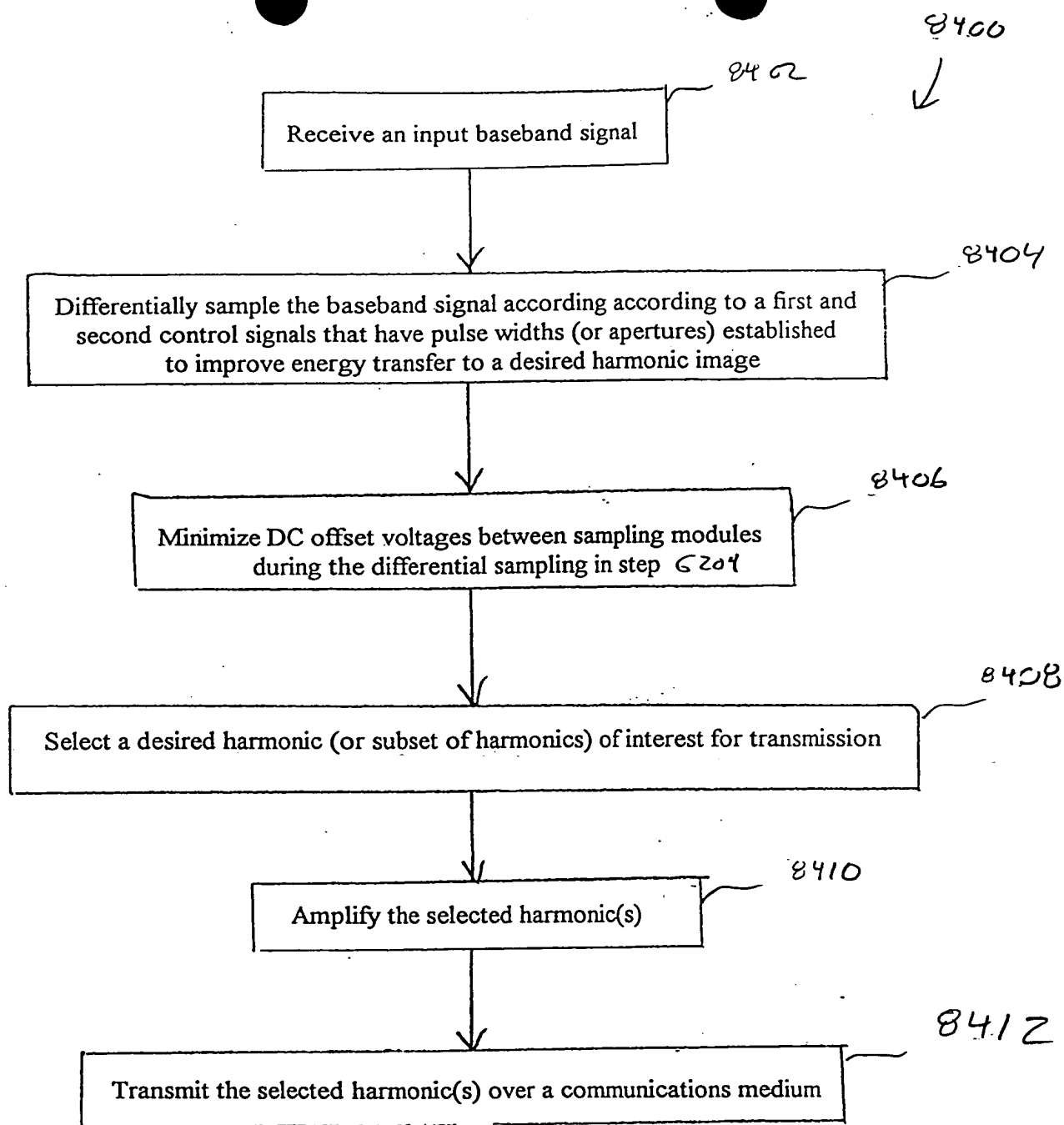


FIG. 84

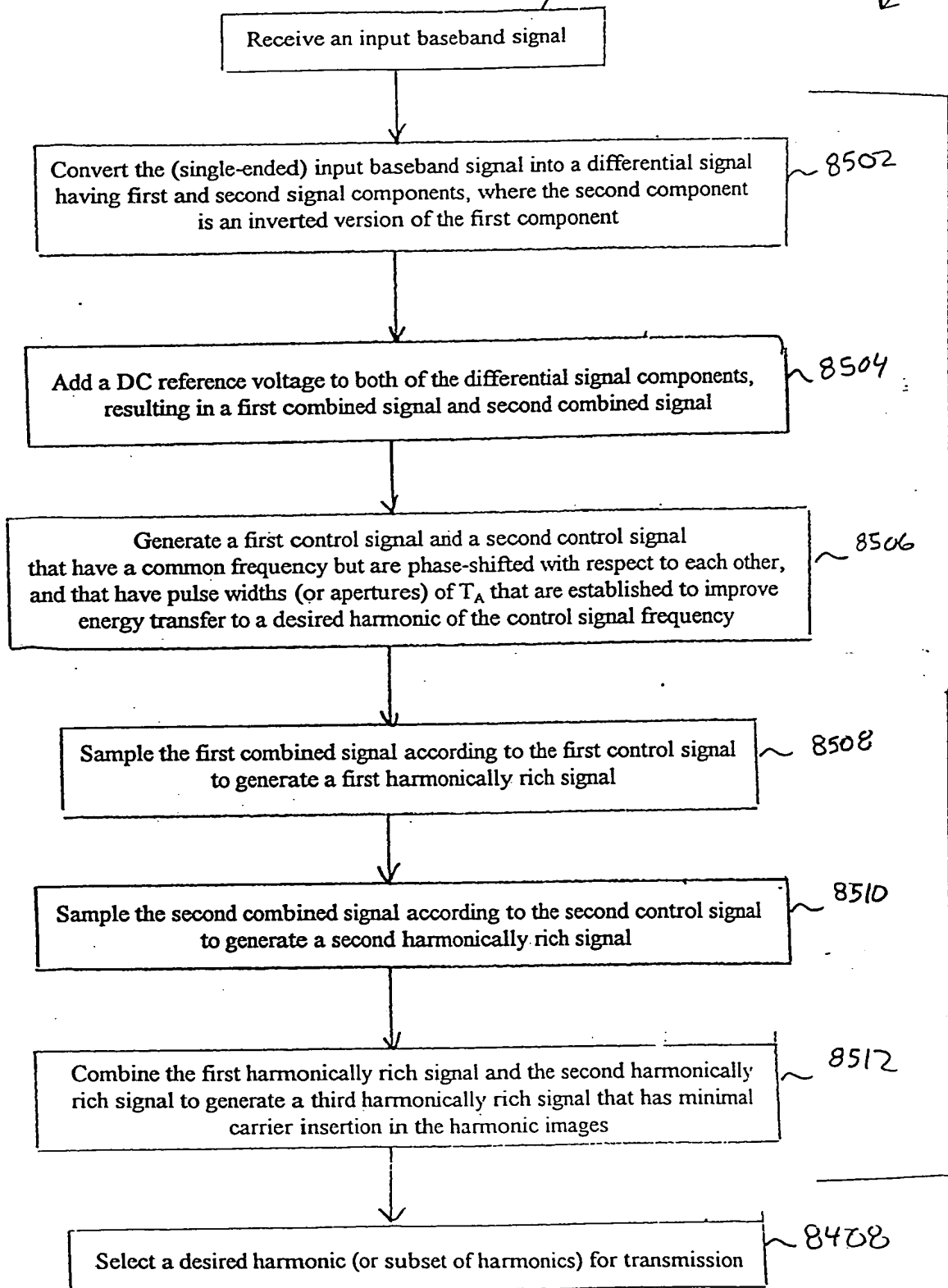


FIG. 85

8600

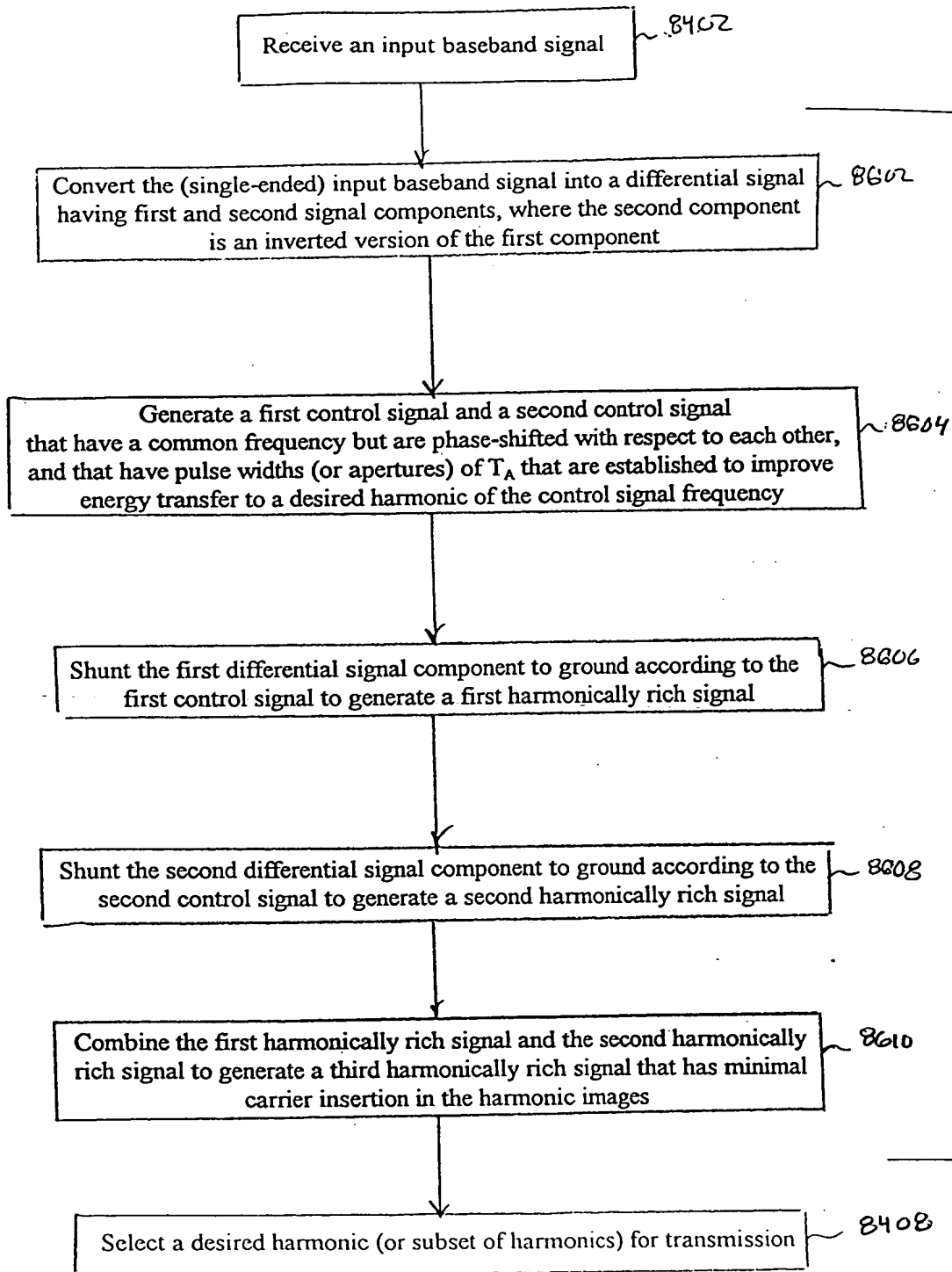


FIG. 86

↙

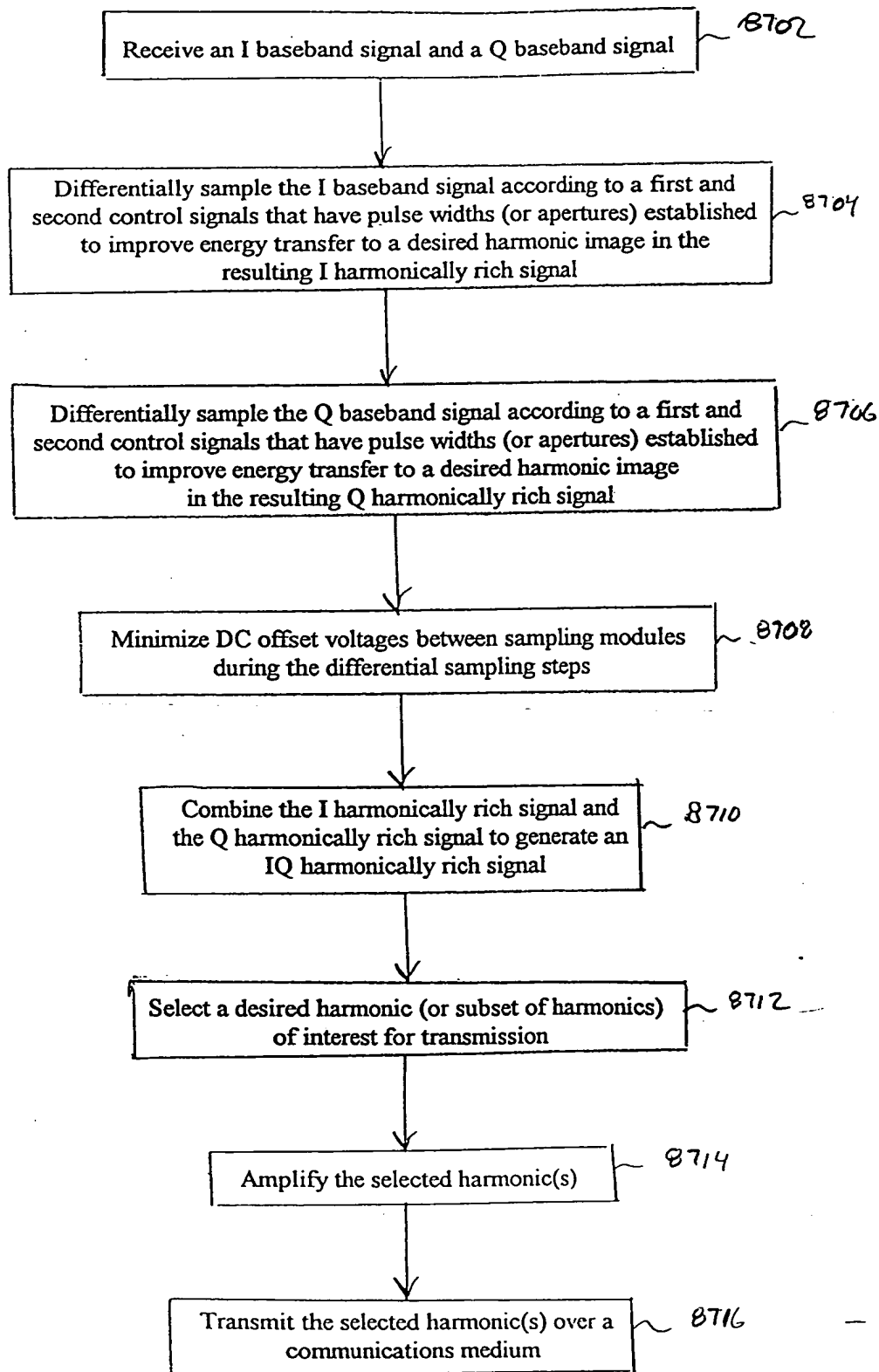
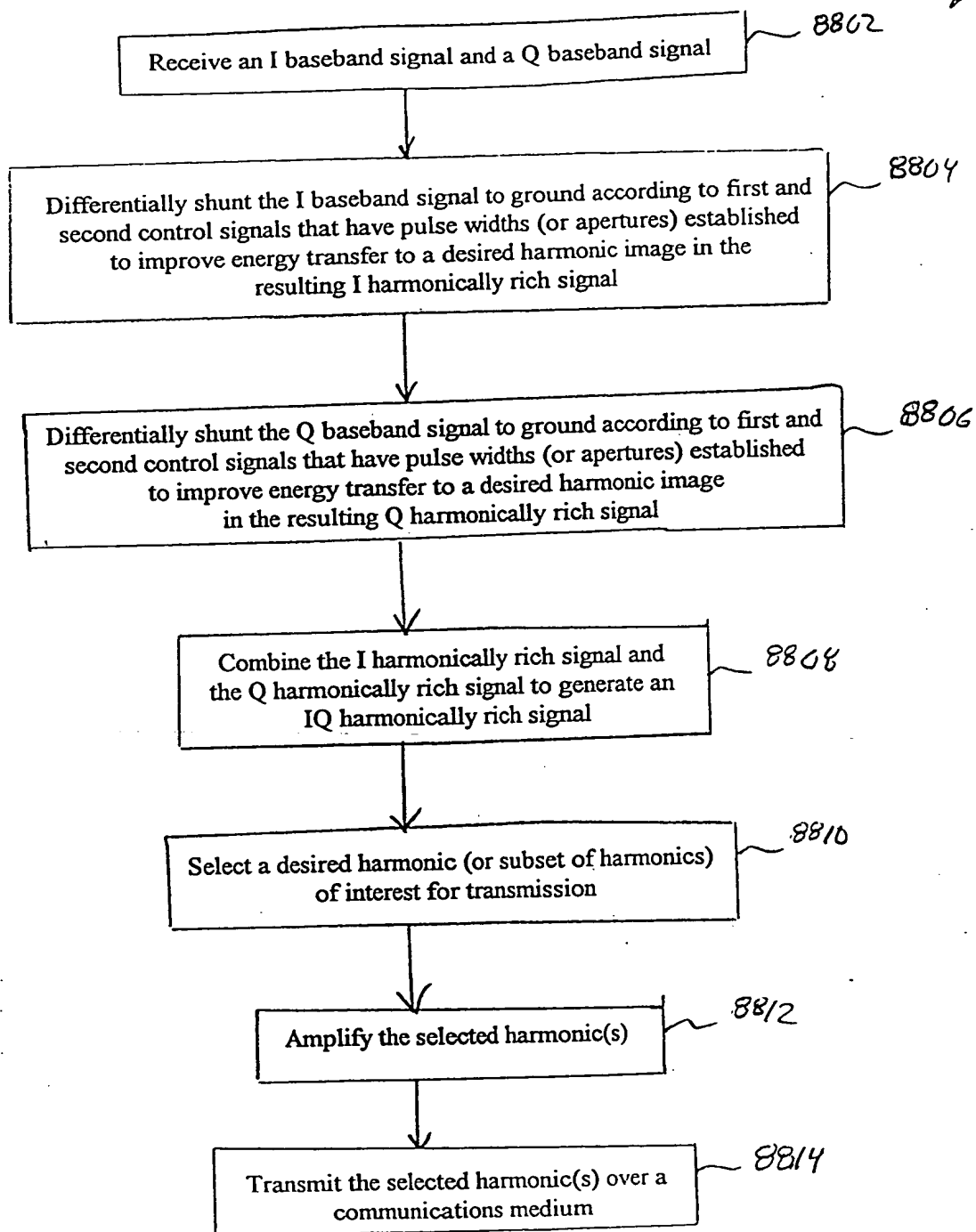


FIG. 87



FIG. 88

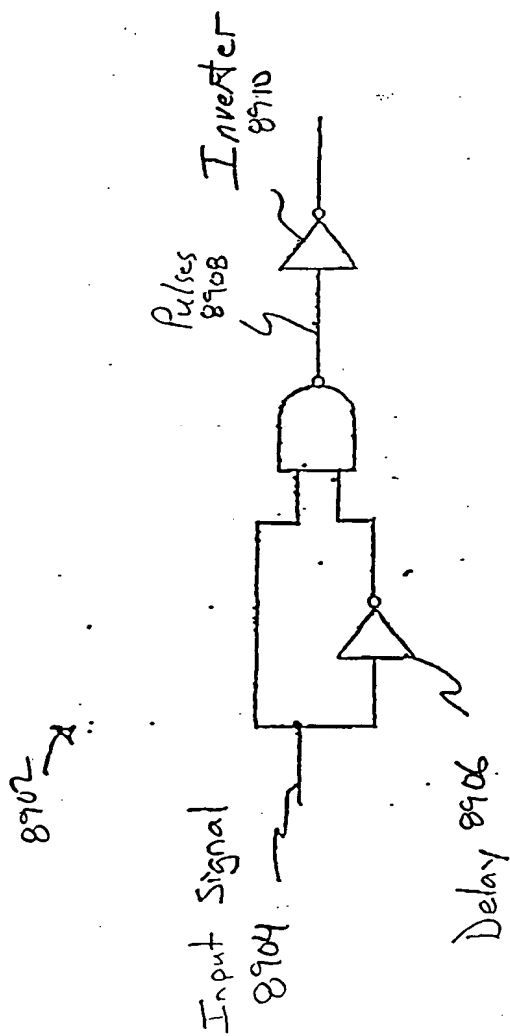


FIG. 89A

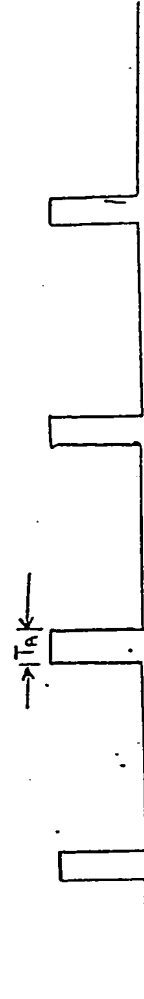
8904

FIG. 89B

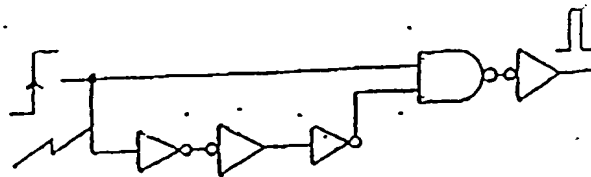


8908

FIG. 89C



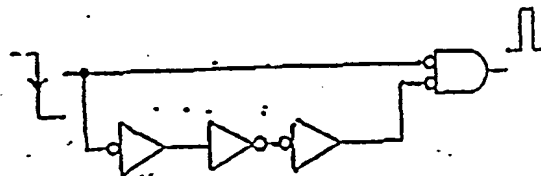
↓



A. rising edge pulse generator

FIG. 89D

—



### B. falling-edge pulse generator

FIG. '89E

9002b

9002a

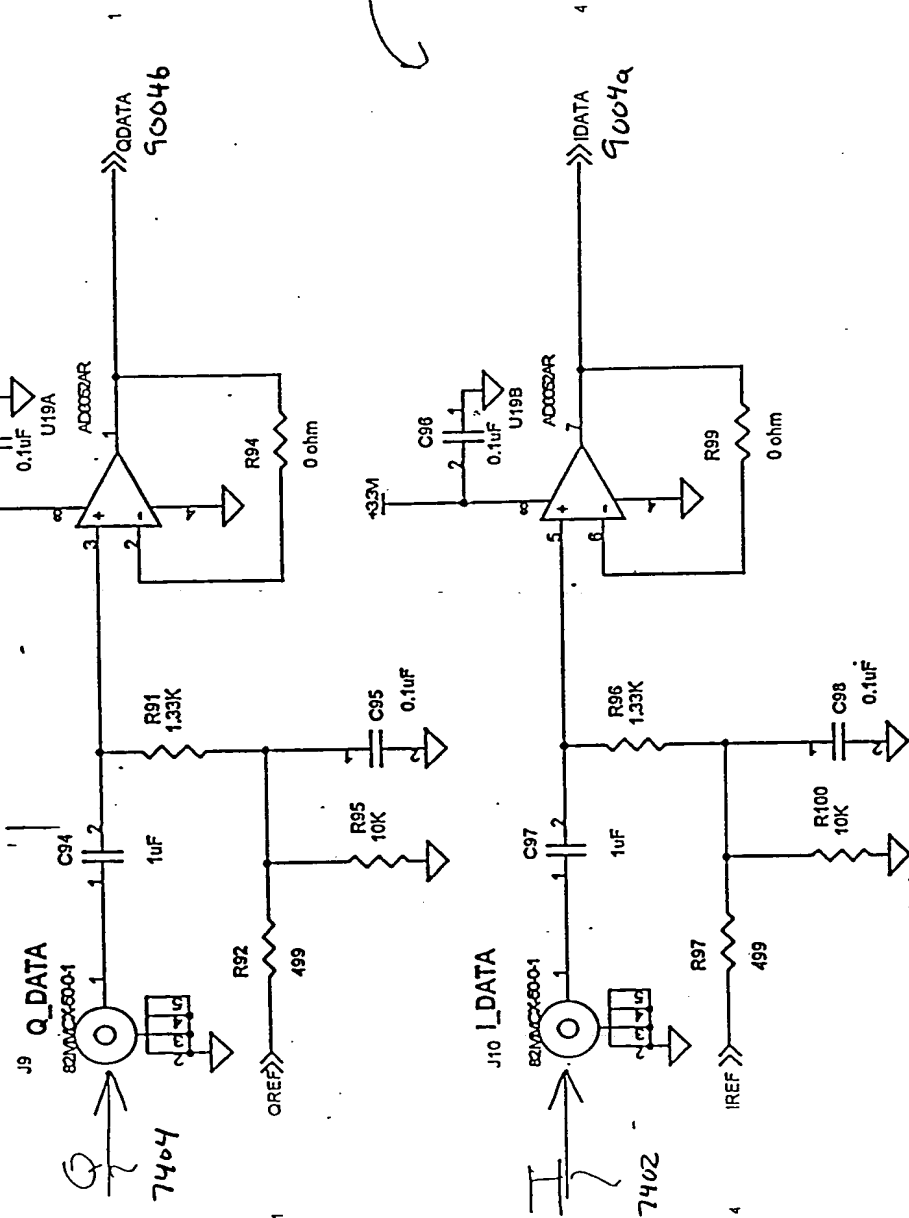
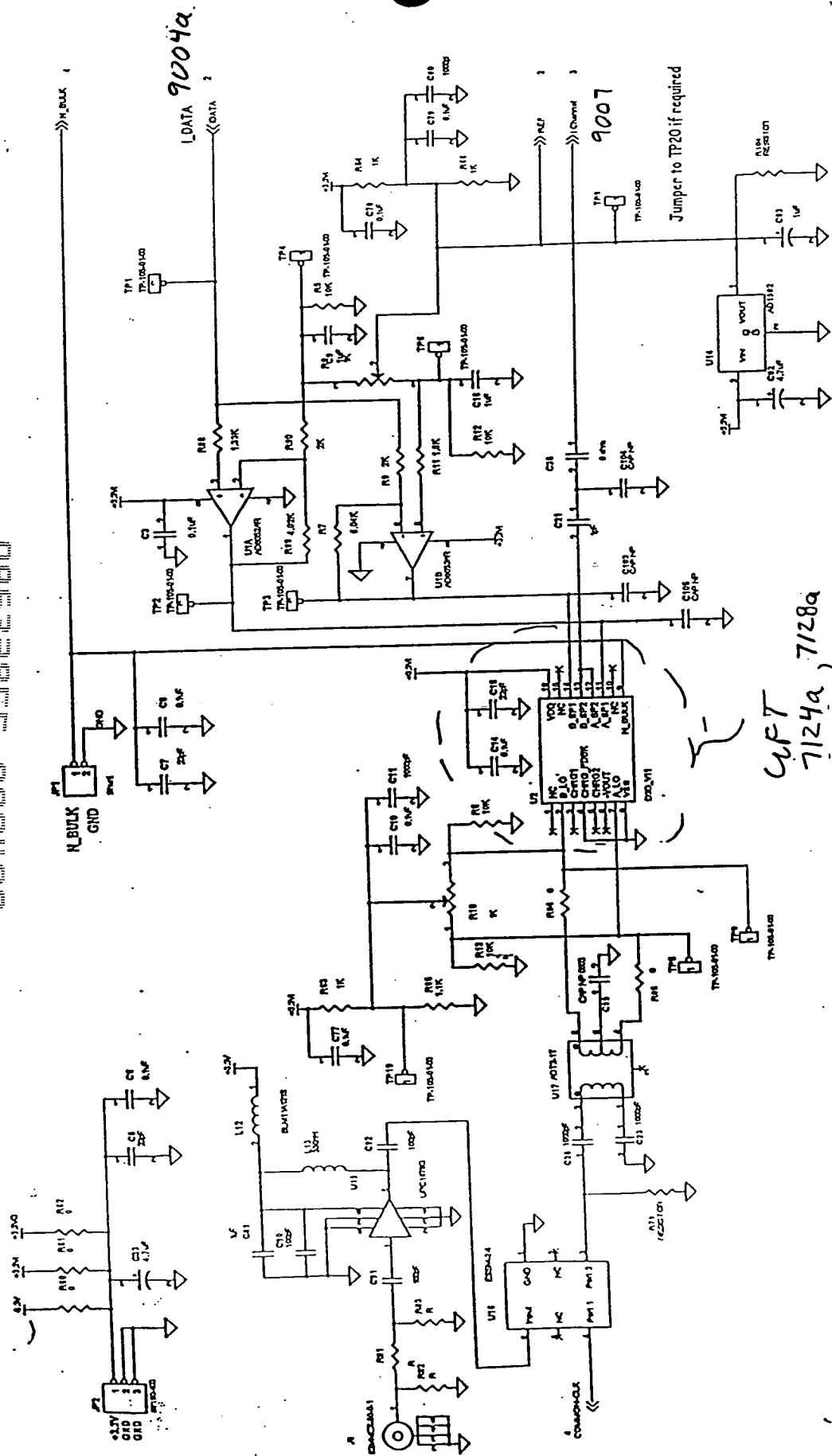


FIG. 90A

[illegible]

$R$  I channel 9006

FIG. 90B



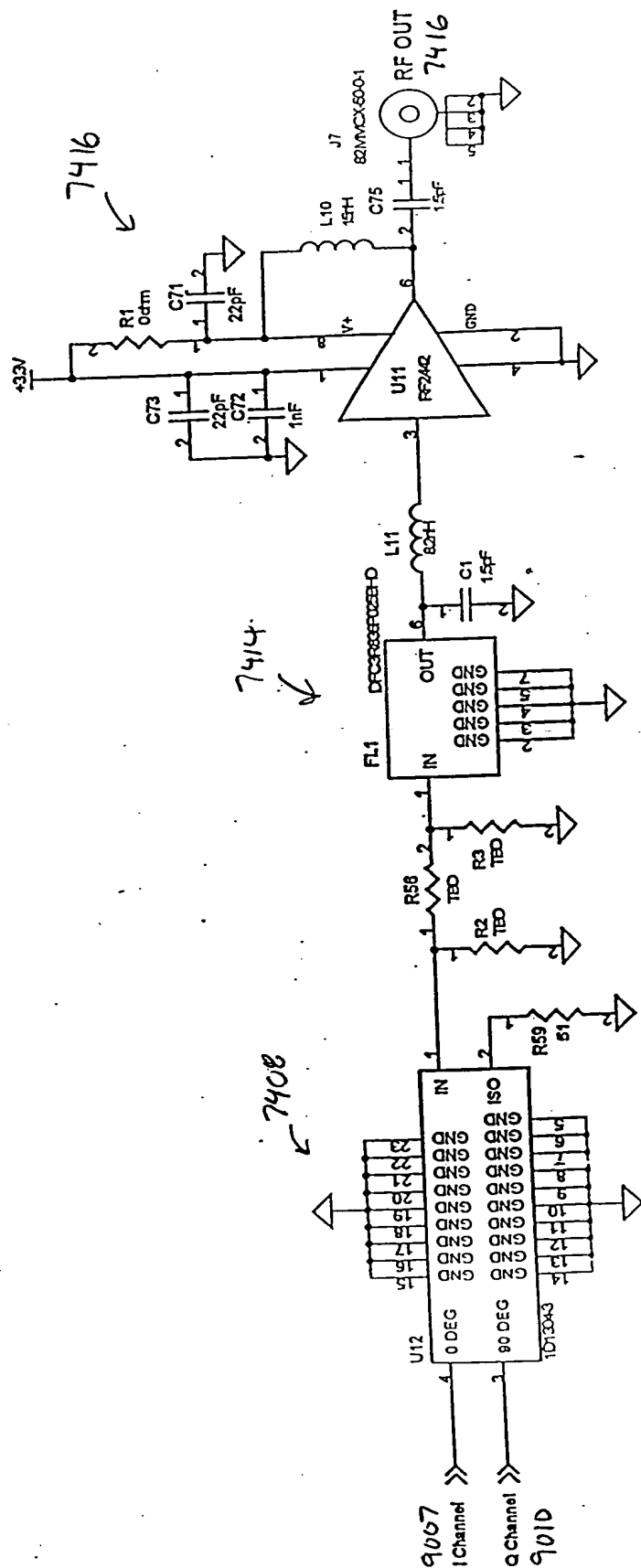
[illegible]

FIG. 90D

Combiner  
9/6/12

000000 55825500

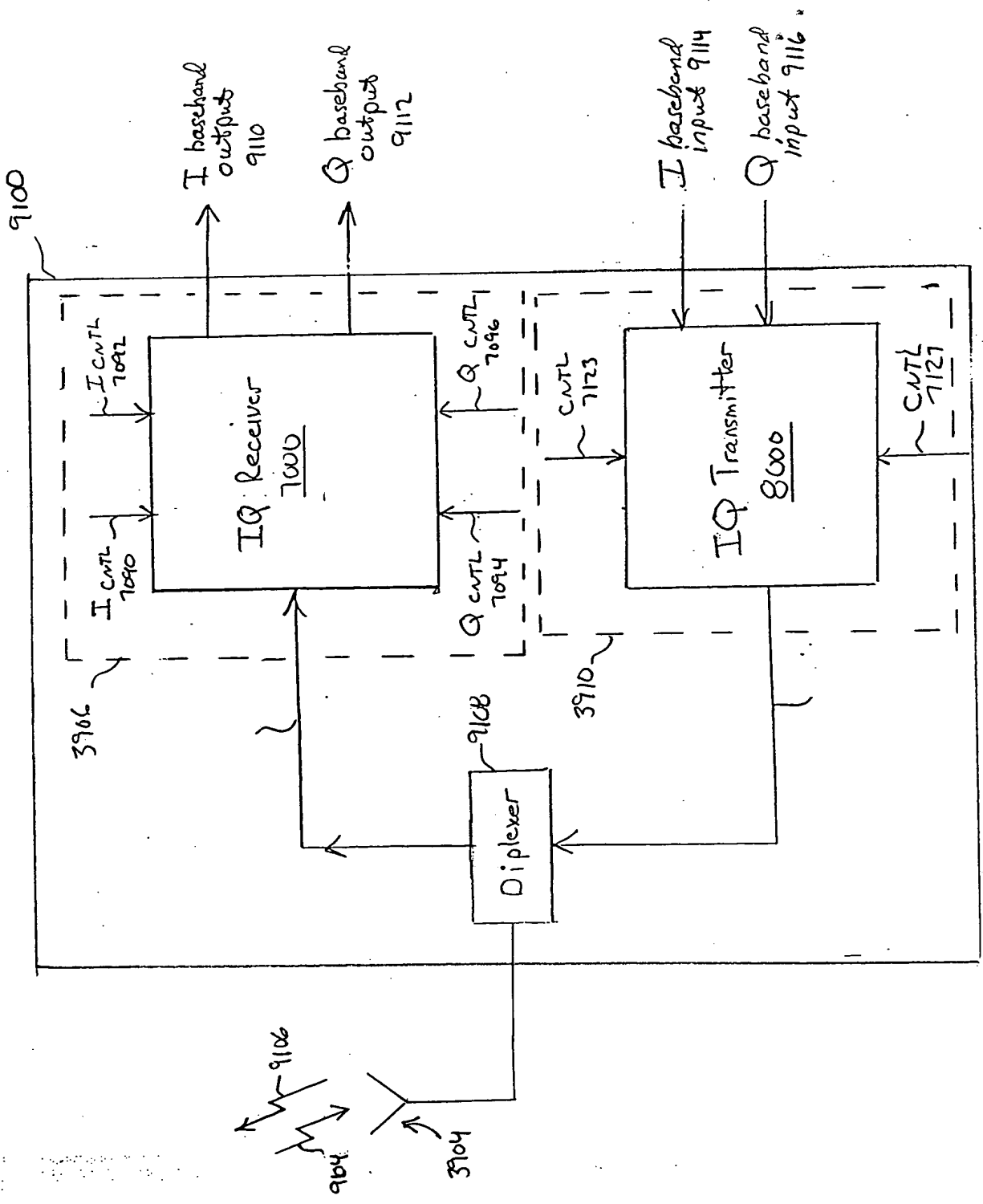
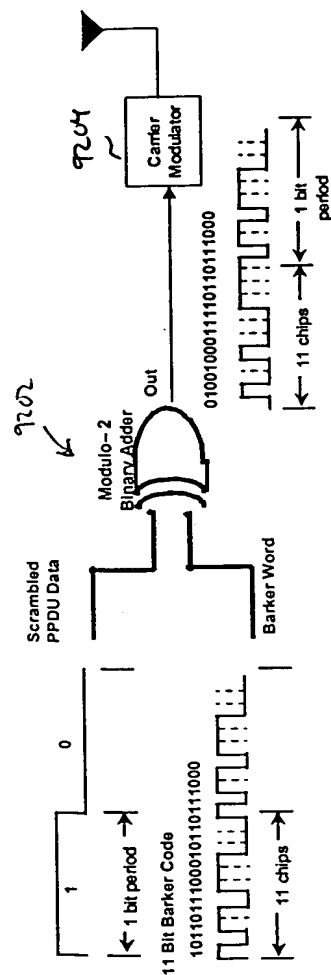
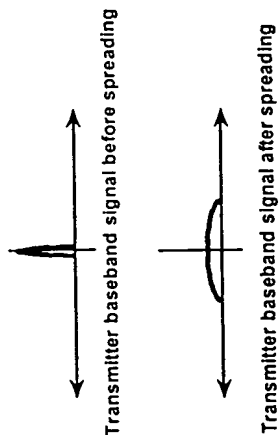


FIG. 91





### Transmit Spectrum



### Receiver Spectrum

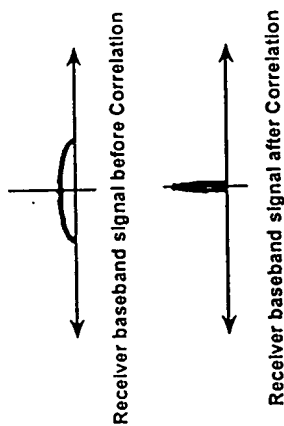


FIG 92

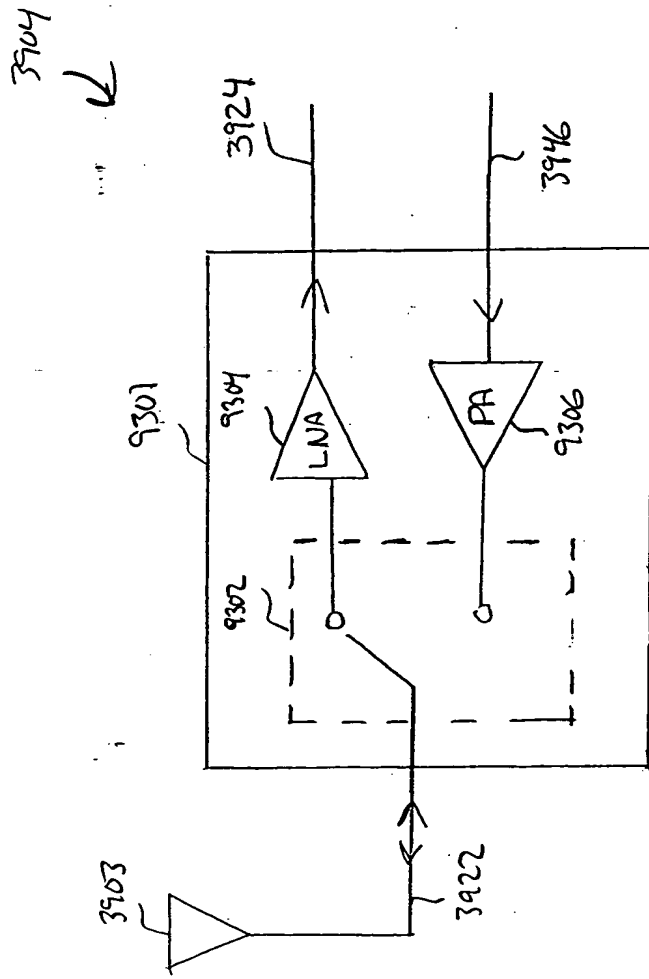
[illegible]

Fig. 93

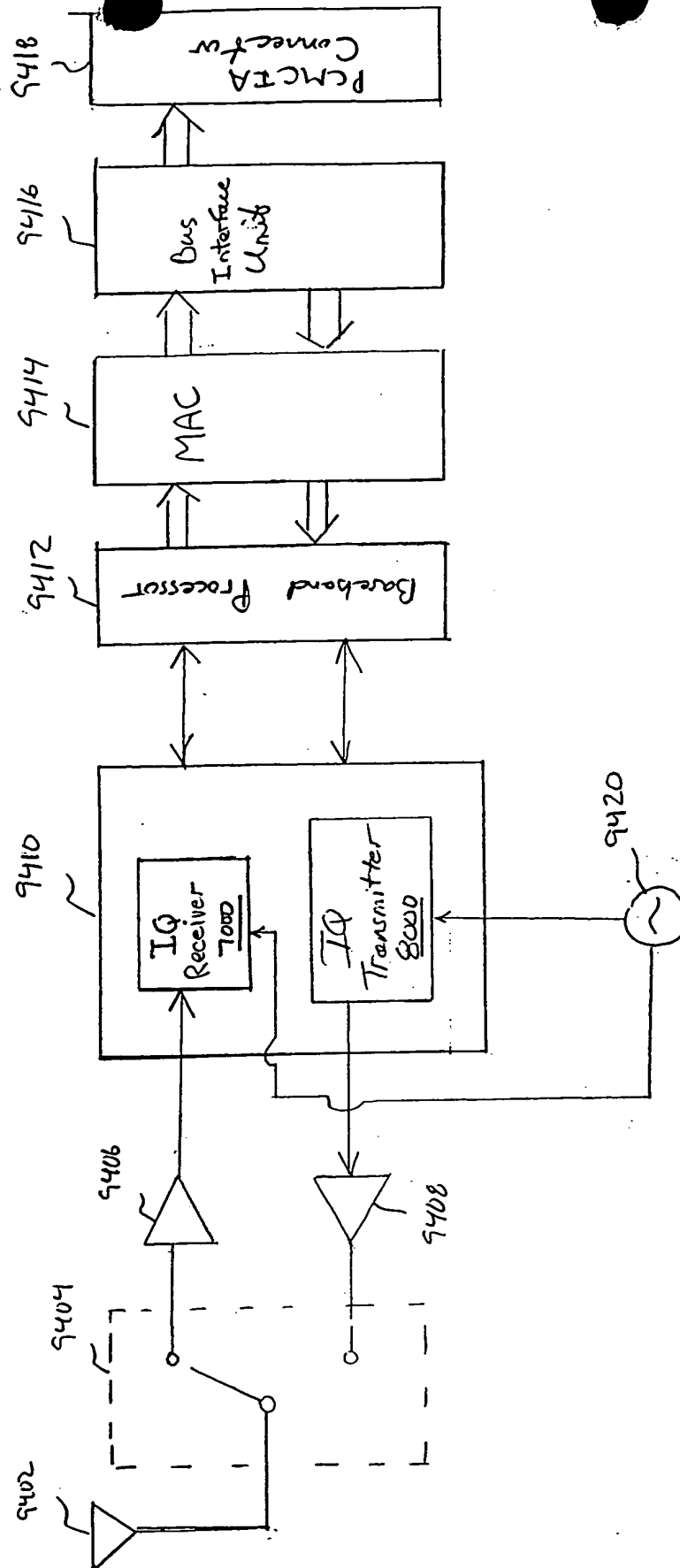


FIG. 94